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TITLE 7—AGRICULTURE

Chapter IX—Agricultural Marketing Service (Marketing Agreements and Orders), Department of Agriculture

[Navel Orange Reg. 98]

PART 914—NAVEL ORANGES GROWN IN ARIZONA AND DESIGNATED PART OF CALIFORNIA

LIMITATION OF HANDLING

§ 914.398 *Navel Orange Regulation*
 98—(a) *Findings.* (1) Pursuant to the marketing agreement, as amended, and Order No. 14, as amended (7 CFR Part 914; 21 F. R. 4707), regulating the handling of navel oranges grown in Arizona and designated part of California, effective September 22, 1953, under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U. S. C. 601 et seq.; 68 Stat. 906, 1047), and upon the basis of the recommendation and information submitted by the Navel Orange Administrative Committee, established under the said amended marketing agreement and order, and upon other available information, it is hereby found that the limitation of handling of such navel oranges, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that it is impracticable and contrary to the public interest to give preliminary notice, engage in public rule making procedure, and postpone the effective date of this section until 30 days after publication thereof in the *FEDERAL REGISTER* (60 Stat. 237; 5 U. S. C. 1001 et seq.) because the time intervening between the date when information upon which this section is based became available and the time when this section must become effective in order to effectuate the declared policy of the act is insufficient, and a reasonable time is permitted, under the circumstances, for preparation for such effective time; and good cause exists for making the provisions hereof effective as hereinafter set forth. The Navel Orange Administrative Committee held an open meeting on December 20, 1956, after giving due notice thereof, to con-

sider supply and market conditions for navel oranges and the need for regulation; interested persons were afforded an opportunity to submit information and views at this meeting; the recommendation and supporting information for regulation during the period specified herein were promptly submitted to the Department after such meeting was held; the provisions of this section, including its effective time, are identical with the aforesaid recommendation of the committee, and information concerning such provisions and effective time has been disseminated among handlers of such navel oranges; it is necessary, in order to effectuate the declared policy of the act, to make this section effective during the period herein specified; and compliance with this section will not require any special preparation on the part of persons subject thereto which cannot be completed on or before the effective date hereof.

(b) *Order.* (1) The quantity of navel oranges grown in Arizona and designated part of California which may be handled during the period beginning at 12:01 a. m., P. s. t., December 23, 1956, and ending at 12:01 a. m., P. s. t., December 30, 1956, is hereby fixed as follows:

- (i) District 1: 415,800 cartons;
- (ii) District 2: 35,870 cartons;
- (iii) District 3: Unlimited movement;
- (iv) District 4: Unlimited movement.

(2) All navel oranges handled during the period specified in this section are subject also to all applicable size restrictions which are in effect pursuant to this part during such period.

(3) As used in this section, "handled," "District 1," "District 2," "District 3," "District 4," and "carton" have the same meaning as when used in said amended marketing agreement and order.

(Sec. 5, 49 Stat. 753, as amended; 7 U. S. C. 608c)

Dated: December 21, 1956.

[SEAL] G. R. GRANGE,
Acting Director, Fruit and Vegetable Division, Agricultural Marketing Service.

[F. R. Doc. 56-10480; Filed, Dec. 21, 1956; 11:33 a. m.]

CONTENTS

Agricultural Marketing Service	Page
Notices:	
St. Paul Union Stockyards Co.; petition for modification of rate order.....	10318
Rules and regulations:	
Oranges, navel grown in Arizona and designated part of California; limitation of handling.....	10289
Agriculture Department	
See Agricultural Marketing Service; Commodity Stabilization Service.	
Civil Aeronautics Administration	
Rules and regulations:	
Air traffic, security control; additional exemptions and revision of Northern ADIZ.....	10310
Civil Aeronautics Board	
Rules and regulations:	
Rotocraft airworthiness; normal category.....	10291
Commerce Department	
See also Civil Aeronautics Administration; Foreign Commerce Bureau; Maritime Administration; National Shipping Authority.	
Notices:	
Clemson, John H.; statement of changes in financial interests.....	10319
Commodity Stabilization Service	
Proposed rule making:	
Tobacco, cigar-filler, and cigar-filler and binder; determination to be made by the Secretary on whether to treat types 51 and 52 as a kind of tobacco.....	10317
Federal Communications Commission	
Notices:	
Hearings, etc.:	
Good Music Station, Inc., and RKO Teleradio Pictures, Inc.....	10319
Jefferson County Broadcasting Co. and Kermit F. Tracy.....	10320
Morrison Cab Co.....	10319
Volusia County Broadcasting Corp.....	10320
	10289



FEDERAL REGISTER

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CONTENTS—Continued

Federal Power Commission	Page
Notices:	
Hearings, etc.:	
Colorado Interstate Gas Co.	10320
Howell, Holloway & Howell and Texas Gas Transmis- sion Corp.	10320
Tennessee Gas Transmission Co.	10321
Food and Drug Administration	
Rules and regulations:	
Certification:	
Bacitracin and bacitracin- containing drugs	10317
Penicillin and penicillin- containing drugs	10317

CONTENTS—Continued

Food and Drug Administration—Continued	Page
Rules and regulations—Con.	
Statements of general policy or interpretation	10317
Foreign Commerce Bureau	
Rules and regulations:	
Export regulations:	
Export privileges, denial or suspension	10315
Licensing policies and related special provisions	10315
Positive list of commodities and related matters	10316
Health, Education, and Welfare Department	
See Food and Drug Administra- tion.	
Interior Department	
See also Land Management Bu- reau.	
Notices:	
Commissioner of Reclamation; delegation of authority to ne- gotiate contracts for services of architectural and engineer- ing firms	10318
Interstate Commerce Commis- sion	
Notices:	
Fourth section applications for relief	10324
Justice Department	
Rules and regulations:	
Foreign Agents Registration Act of 1938, as amended, adminis- tration	10310
Land Management Bureau	
Notices:	
Arizona; small tract classifica- tion	10317
Wisconsin; filing of plat of sur- vey and order providing for opening of public lands	10318
Maritime Administration	
See also National Shipping Au- thority.	
Notices:	
U. S. flag service requirements, Trade Route 24; amendments to conclusions and determina- tions by Maritime Adminis- trator	10318
National Shipping Authority	
Rules and regulations:	
Authority of General Agents to provide for American Mer- chant Marine Library service; miscellaneous amendments	10290
Securities and Exchange Com- mission	
Notices:	
Hearings, etc.:	
American Natural Gas Co. and Michigan Consolidated Gas Co.	10322
Atchison, Topeka & Santa Fe Railway Co.	10321
Bevanda Mines, Inc.	10323
Union Pacific Railroad Co.	10321
Yankee Atomic Electric Co. et al.	10321

CODIFICATION GUIDE

A numerical list of the parts of the Code of Federal Regulations affected by documents published in this issue. Proposed rules, as opposed to final actions, are identified as such.

Title	Page
Title 7	
Chapter VII:	
Part 723 (proposed)	10317
Chapter IX:	
Part 914	10289
Title 14	
Chapter I:	
Part 6	10291
Chapter II:	
Part 620	10310
Title 15	
Chapter III:	
Part 373 (2 documents)	10315
Part 382	10315
Part 399	10316
Title 21	
Chapter I:	
Part 3	10317
Part 146a	10317
Part 146e	10317
Title 28	
Chapter I:	
Part 5	10310
Title 32A	
Chapter XVIII (NSA):	
AGE-7	10290

TITLE 32A—NATIONAL DEFENSE, APPENDIX

Chapter XVIII—National Shipping Authority, Maritime Administration, Department of Commerce

[NSA Order 62 (AGE-7, Amdt. 5)]

AGE-7—AUTHORITY OF GENERAL AGENTS TO PROVIDE FOR AMERICAN MERCHANT MARINE LIBRARY SERVICE

MISCELLANEOUS AMENDMENTS

It is hereby ordered that NSA Order No. 62 (AGE-7) be further amended as follows:

1. Section 2 *General Agents' authority; form of agreement*, is hereby amended by deleting the first sentence of article 7 thereof and substituting therefor the following new sentence: "The Agreement shall be in effect for the calendar years 1951 through 1957."

2. Section 4 *Period of the agreement*, is hereby amended by deleting the first sentence thereof and substituting therefor the following new sentence: "The Agreement shall be in effect for the calendar years 1951 through 1957."

(Sec. 204, 49 Stat. 1987, as amended; 46 U. S. C. 1114)

Approved: December 12, 1956.

[SEAL] WALTER C. FORD,
Deputy Maritime Administrator.

[F. R. Doc. 56-10414; Filed, Dec. 21, 1956;
8:48 a. m.]

TITLE 14—CIVIL AVIATION

Chapter I—Civil Aeronautics Board

Subchapter A—Civil Air Regulations

PART 6—ROTCRAFT AIRWORTHINESS;
NORMAL CATEGORY

REVISION OF PART

Because of the number of outstanding amendments to Part 6 there follows a revision of Part 6 incorporating all amendments thereto which were in effect on December 20, 1956.

By the Civil Aeronautics Board.

[SEAL] M. C. MULLIGAN,
Secretary.

Subpart A—General

APPLICABILITY AND DEFINITIONS

- Sec.
6.0 Applicability of this part.
6.1 Definitions.

CERTIFICATION

- 6.10 Eligibility for type certificates.
6.11 Designation of applicable regulations.
6.12 Recording of applicable regulations.
6.13 Type certificate.
6.14 Data required.
6.15 Inspections and tests.
6.16 Flight tests.
6.17 Airworthiness, experimental, and production certificates.
6.18 Approval of materials, parts, processes, and appliances.
6.19 Changes in type design.

Subpart B—Flight

GENERAL

- 6.100 Proof of compliance.
6.101 Weight limitations.
6.102 Center of gravity limitations.
6.103 Rotor limitations and pitch settings.
6.104 Empty weight.
6.105 Use of ballast.

PERFORMANCE

- 6.110 General.
6.111 Take-off.
6.112 Climb.
6.113 Minimum operating speed performance.
6.114 Autorotative or one-engine-inoperative landing.
6.115 Power-off landings for multiengine rotorcraft.

FLIGHT CHARACTERISTICS

- 6.120 General.
6.121 Controllability.
6.122 Trim.
6.123 Stability.

GROUND AND WATER HANDLING CHARACTERISTICS

- 6.130 General.
6.131 Ground resonance.
6.132 Spray characteristics.

MISCELLANEOUS FLIGHT REQUIREMENTS

- 6.140 Flutter and vibration.

Subpart C—Structure

GENERAL

- 6.200 Loads.
6.201 Strength and deformation.
6.202 Proof of structure.
6.203 Structural and dynamic tests.
6.204 Design limitations.

FLIGHT LOADS

- 6.210 General.
6.211 Flight load factors.
6.212 Maneuvering conditions.
6.213 Gust conditions.

CONTROL SURFACE AND SYSTEM LOADS

- Sec.
6.220 General.
6.221 Auxiliary rotor assemblies.
6.222 Auxiliary rotor attachment structure.
6.223 Tail rotor guard.
6.224 Stabilizing and control surfaces.
6.225 Primary control systems.

LANDING LOADS

- 6.230 General.
6.231 Level landing conditions.
6.232 Nose-up landing condition.
6.233 One-wheel landing condition.
6.234 Lateral-drift landing condition.
6.235 Brake roll conditions.
6.236 Taxying condition.
6.237 Shock absorption tests.
6.240 Ski landing conditions.
6.245 Float landing conditions.

MAIN COMPONENT REQUIREMENTS

- 6.250 Main rotor structure.
6.251 Fuselage, landing gear, and rotor pylon structure.

EMERGENCY LANDING CONDITIONS

- 6.260 General.

Subpart D—Design and Construction

GENERAL

- 6.300 Scope.
6.301 Materials.
6.302 Fabrication methods.
6.303 Standard fastenings.
6.304 Protection.
6.305 Inspection provisions.
6.306 Material strength properties and design values.
6.307 Special factors.

MAIN ROTOR

- 6.310 Main rotor blades; pressure venting and drainage.
6.311 Stops.
6.312 Rotor and blade balance.
6.313 Rotor blade clearance.

CONTROL SYSTEMS

- 6.320 General.
6.321 Control system stops.
6.322 Control system locks.
6.323 Static tests.
6.324 Operation tests.
6.325 Control system details.
6.326 Spring devices.
6.327 Autorotation control mechanism.

LANDING GEAR

- 6.335 Wheels.
6.336 Brakes.
6.337 Tires.
6.338 Skis.

FLOATS

- 6.340 General.
6.341 Buoyancy (main floats).
6.342 Float strength.

PERSONNEL AND CARGO ACCOMMODATIONS

- 6.350 Pilot compartment; general.
6.351 Pilot compartment vision.
6.352 Pilot windshield and windows.
6.353 Controls.
6.354 Doors.
6.355 Seats and berths.
6.356 Cargo and baggage compartments.
6.357 Emergency exits.
6.358 Ventilation.

FIRE PREVENTION

- 6.380 General.
6.381 Cabin interiors.
6.382 Cargo and baggage compartments.
6.383 Heating systems.
6.384 Fire protection of structure, controls, and other parts.

MISCELLANEOUS

- 6.390 Leveling marks.
6.391 Ballast provisions.

Subpart E—Powerplant Installation

GENERAL

- Sec.
6.400 Scope and general design.
6.401 Engine-type certification.
6.402 Engine vibration.

ROTOR DRIVE SYSTEM

- 6.410 Rotor drive mechanism.
6.411 Rotor brakes.
6.412 Rotor drive and control mechanism endurance tests.
6.413 Additional tests.
6.414 Shafting critical speeds.
6.415 Shafting joints.

FUEL SYSTEM

- 6.420 Capacity and feed.
6.421 Unusable fuel supply.
6.422 Fuel tank construction and installation.
6.423 Fuel tank details.
6.424 Fuel pumps.
6.425 Fuel system lines and fittings.
6.426 Valves.
6.427 Strainers.
6.428 Drains.
6.429 Fuel quantity indicator.

OIL SYSTEM

- 6.440 General.
6.441 Oil tank construction and installation.
6.442 Oil lines and fittings.
6.443 Oil drains.
6.444 Oil quantity gauge.
6.445 Oil temperature indication.
6.446 Oil pressure indication.

COOLING SYSTEM

- 6.450 General.
6.451 Cooling tests.

INDUCTION AND EXHAUST SYSTEMS

- 6.460 General.
6.461 Air induction.
6.462 Induction system de-icing and anti-icing provisions.
6.463 Exhaust manifolds.

POWERPLANT CONTROLS AND ACCESSORIES

- 6.470 Powerplant controls; general.
6.471 Throttle controls.
6.472 Ignition switches.
6.473 Mixture controls.
6.474 Powerplant accessories.

POWERPLANT FIRE PROTECTION

- 6.480 General.
6.481 Ventilation.
6.482 Shutoff means.
6.483 Fire wall.
6.484 Engine cowling and engine compartment covering.
6.485 Lines and fittings.
6.486 Flammable fluids.

Subpart F—Equipment

GENERAL

- 6.600 Scope.
6.601 Functional and installation requirements.
6.602 Required basic equipment.
6.603 Flight and navigational instruments.
6.604 Powerplant instruments.
6.605 Miscellaneous equipment.

INSTRUMENTS; INSTALLATION

- 6.610 General.
6.611 Arrangement and visibility of instrument installations.
6.612 Flight and navigational instruments.
6.613 Powerplant instruments.

ELECTRICAL SYSTEMS AND EQUIPMENT

- 6.620 Installation.
6.621 Batteries.
6.622 Generator system.

- Sec.
6.623 Master switch.
6.624 Master switch installation.
6.625 Protective devices.
6.626 Protective devices installation.
6.627 Electric cables.
6.628 Switches.

LIGHTS

- 6.630 Instrument lights.
6.631 Landing lights.
6.632 Position light system installation.
6.633 Position light system dihedral angles.
6.634 Position light distribution and intensities.
6.635 Color specifications.
6.636 Riding light.

SAFETY EQUIPMENT

- 6.640 General.
6.641 Flares.
6.642 Flare installation.
6.643 Safety belts.
6.644 Emergency flotation and signaling equipment.

MISCELLANEOUS EQUIPMENT

- 6.650 Hydraulic systems.

Subpart G—Operating Limitations and Information

GENERAL

- 6.700 Scope.

OPERATING LIMITATIONS

- 6.710 Air-speed limitations; general.
6.711 Never-exceed speed V_{NE} .
6.712 Operating speed range.
6.713 Rotor speed.
6.714 Powerplant limitations.
6.715 Limiting height-speed envelope.
6.716 Rotorcraft weight and center of gravity limitations.
6.717 Minimum flight crew.
6.718 Types of operation.
6.719 Maintenance manual.

MARKINGS AND PLACARDS

- 6.730 General.
6.731 Instrument markings; general.
6.732 Air-speed indicator.
6.733 Magnetic direction indicator.
6.734 Powerplant instruments; general.
6.735 Oil quantity indicator.
6.736 Fuel quantity indicator.
6.737 Control markings.
6.738 Miscellaneous markings and placards.

ROTORCRAFT FLIGHT MANUAL

- 6.740 General.
6.741 Operating limitations.
6.742 Operating procedures.
6.743 Performance information.
6.744 Marking and placard information.

ROTORCRAFT IDENTIFICATION DATA

- 6.750 Identification plate.
6.751 Identification marks.

AUTHORITY: §§ 6.0 to 6.751 issued under sec. 205, 52 Stat. 984, as amended; 49 U. S. C. 425. Interpret or apply secs. 601, 603, 52 Stat. 1007, as amended, 1009, as amended; 49 U. S. C. 551, 553.

SUBPART A—GENERAL

APPLICABILITY AND DEFINITIONS

§ 6.0 *Applicability of this part.* This part contains standards with which compliance shall be demonstrated for the issuance of and changes to type certificates for rotorcraft. This part, until superseded or rescinded, shall apply to rotorcraft of any weight for which applications for type certification under this part were made between the effective date of this part (January 15, 1951) and August 1, 1956. For applications for type certificates made after August 1,

1956, this part shall apply only to rotorcraft which have a maximum weight of 6,000 pounds or less.

§ 6.1 *Definitions.* As used in this part, terms are defined as follows:

(a) *Administration*—(1) *Administrator.* The Administrator is the Administrator of Civil Aeronautics.

(2) *Applicant.* An applicant is a person or persons applying for approval of a rotorcraft of any part thereof.

(3) *Approved.* Approved, when used alone or as modifying terms such as means, devices, specifications, etc., means approved by the Administrator. (See § 6.18.)

(b) *Rotorcraft types*—(1) *Rotorcraft.* A rotorcraft is any aircraft deriving its principal lift from one or more rotors.

(2) *Helicopter.* A helicopter is a rotorcraft which depends principally for its support and motion in the air upon the lift generated by one or more power-driven rotors, rotating on substantially vertical axes.

(3) *Gyroplane.* A gyroplane is a rotorcraft which depends principally for its support upon the lift generated by one or more rotors which are not power driven, except for initial starting, and which are caused to rotate by the action of the air when the rotorcraft is in motion. The propulsion is independent of the rotor system and usually consists of conventional propellers.

(4) *Gyrodyne.* A gyrodyne is a rotorcraft which depends principally for its support upon the lift generated by one or more rotors, which are partially power driven, rotating on substantially vertical axes. The propulsion is independent of the rotor system and usually consists of conventional propellers.

(c) *General design*—(1) *Standard atmosphere.* The standard atmosphere is an atmosphere defined as follows:

(i) The air is a dry, perfect gas,
(ii) The temperature at sea level is 59° F.,

(iii) The pressure at sea level is 29.92 inches Hg,

(iv) The temperature gradient from sea level to the altitude at which the temperature equals -67° F. is -0.003566° F./ft. and zero thereabove, and

(v) The density P_0 at sea level under the above conditions is 0.002378 pound sec^2/ft^4 .

(2) *Maximum anticipated air temperature.* The maximum anticipated air temperature is a temperature specified for the purpose of compliance with the powerplant cooling standards. (See § 6.451.)

(3) *Aerodynamic coefficients.* Aerodynamic coefficients are nondimensional coefficients for forces and moments. They correspond with those adopted by the U. S. National Advisory Committee for Aeronautics.

(4) *Autorotation.* Autorotation is a rotorcraft flight condition in which the lifting rotor is driven entirely by the action of the air when the rotorcraft is in motion.

(5) *Autorotative landing.* An autorotative landing is any landing of a rotorcraft in which the entire maneuver is accomplished without the application of power to the rotor.

(6) *Ground resonance.* Ground resonance is the mechanical instability encountered when the rotorcraft is in contact with the ground.

(7) *Mechanical instability.* Mechanical instability is an unstable resonant condition due to the interaction between the rotor blades and the rotorcraft structure while the rotorcraft is on the ground or airborne.

(d) *Weights*—(1) *Maximum weight.* The maximum weight of the rotorcraft is that maximum at which compliance with the requirements of this part is demonstrated. (See § 6.101.)

(2) *Minimum weight.* The minimum weight of the rotorcraft is that minimum at which compliance with the requirements of this part is demonstrated. (See § 6.101.)

(3) *Empty weight.* The empty weight of the rotorcraft is a readily reproducible weight which is used in the determination of the operating weights. (See § 6.104.)

(4) *Design maximum weight.* The design maximum weight is the maximum weight of the rotorcraft at which compliance is shown with the structural loading conditions. (See § 6.101.)

(5) *Design minimum weight.* The design minimum weight is the minimum weight of the rotorcraft at which compliance is shown with the structural loading conditions. (See § 6.101.)

(6) *Design unit weight.* The design unit weight is a representative weight used to show compliance with the structural design requirements:

- (i) Gasoline 6 pounds per U. S. gallon.
(ii) Lubricating oil 7.5 pounds per U. S. gallon.
(iii) Crew and passengers 170 pounds per person.

(e) *Speeds*—(1) *IAS.* Indicated air speed is equal to the pitot static air-speed indicator reading as installed in the rotorcraft without correction for air-speed indicator system errors but including the sea level standard adiabatic compressible flow correction. (This latter correction is included in the calibration of the air-speed instrument dials.) (See §§ 6.612 and 6.732.)

(2) *CAS.* Calibrated air speed is equal to the air-speed indicator reading corrected for position and instrument error. (As a result of the sea level adiabatic compressible flow correction to the air-speed instrument dial, CAS is equal to the true air speed TAS in standard atmosphere at sea level.)

(3) *EAS.* Equivalent air speed is equal to the air-speed indicator reading corrected for position error, instrument error, and for adiabatic compressible flow for the particular altitude. (EAS is equal to CAS at sea level in standard atmosphere.)

(4) *TAS.* True air speed of the rotorcraft relative to undisturbed air, $(TAS = EAS (p_0/p)^{1/2})$

(5) V_H . The maximum speed obtainable in level flight with rated rpm and power.

(6) V_{NE} . The never-exceed speed. (See § 6.711.)

(7) V_X . The speed for best angle of climb.

(8) V_Y . The speed for best rate of climb.

(f) **Structural**—(1) **Limit load.** A limit load is the maximum load anticipated in normal conditions of operation. (See § 6.200.)

(2) **Ultimate load.** An ultimate load is a limit load multiplied by the appropriate factor of safety. (See § 6.200.)

(3) **Factor of safety.** The factor of safety is a design factor used to provide for the possibility of loads greater than those anticipated in normal conditions of operation and for uncertainties in design. (See § 6.200.)

(4) **Load factor.** The load factor is the ratio of a specified load to the total weight of the rotorcraft; the specified load may be expressed in terms of any of the following: aerodynamic forces, inertia forces, or ground or water reactions.

(5) **Limit load factor.** The limit load factor is the load factor corresponding with limit loads.

(6) **Ultimate load factor.** The ultimate load factor is the load factor corresponding with ultimate loads.

(7) **Fitting.** A fitting is a part or terminal used to join one structural member to another. (See § 6.307 (d).)

(g) **Power installation**—(1) **Brake horsepower.** Brake horsepower is the power delivered at the propeller shaft of the engine.

(2) **Take-off power.** Take-off power is the brake horsepower developed under standard sea level conditions, under the maximum conditions of crankshaft rotational speed and engine manifold pressure approved for use in the normal take-off, and limited in use to a maximum continuous period as indicated in the approved engine specification.

(3) **Maximum continuous power.** Maximum continuous power is the brake horsepower developed in standard atmosphere at a specified altitude under the maximum conditions of crankshaft rotational speed and engine manifold pressure approved for use during periods of unrestricted duration.

(4) **Manifold pressure.** Manifold pressure is the absolute pressure measured at the appropriate point in the induction system, usually in inches of mercury.

(5) **Critical altitude.** The critical altitude is the maximum altitude at which in standard atmosphere it is possible to maintain, at a specified rotational speed, a specified power or a specified manifold pressure. Unless otherwise stated, the critical altitude is the maximum altitude at which it is possible to maintain, at the maximum continuous rotational speed, one of the following:

(i) The maximum continuous power, in the case of engines for which this power rating is the same at sea level and at the rated altitude,

(ii) The maximum continuous rated manifold pressure, in the case of engines the maximum continuous power of which is governed by a constant manifold pressure.

(h) **Propellers and rotors**—(1) **Rotor.** Rotor is a system of rotating airfoils.

(2) **Main rotor.** The main rotor is the main system of rotating airfoils providing sustentation for the rotorcraft.

(3) **Auxiliary rotor.** An auxiliary rotor is one which serves either to counteract the effect of the main rotor torque on the rotorcraft, or to maneuver the rotorcraft about one or more of its three principal axes.

(4) **Axis of no feathering.** The axis of no feathering is the axis about which there is no first harmonic feathering or cyclic pitch variation.

(5) **Plane of rotor disc.** The plane of rotor disc is a reference plane at right angles to the axis of no feathering.

(6) **Tip speed ratio.** The tip speed ratio is the ratio of the rotorplane flight velocity component in the plane of rotor disc to the rotational tip speed of the rotor blades expressed as follows:

$$\mu = \frac{V \cos \alpha}{\Omega R}$$

where:

V = air speed of the rotorcraft along flight path (fps),

α = angle between projection in plane of symmetry of axis of no feathering and a line perpendicular to the flight path (radians, positive when axis is pointing aft),

Ω = angular velocity of rotor (radians per second), and

R = rotor radius (ft).

(i) **Fire protection**—(1) **Fireproof.** Fireproof material means a material which will withstand heat at least as well as steel in dimensions appropriate for the purpose for which it is to be used. When applied to material and parts used to confine fires in designated fire zones, fireproof means that the material or part will perform this function under the most severe conditions of fire and duration likely to occur in such zones.

(2) **Fire-resistant.** When applied to sheet or structural members, fire-resistant material means a material which will withstand heat at least as well as aluminum alloy in dimensions appropriate for the purpose for which it is to be used. When applied to fluid-carrying lines, other flammable fluid system components, wiring, air ducts, fittings, and powerplant controls, this term refers to a line and fitting assembly, component, wiring or duct, or controls which will perform the intended functions under the heat and other conditions likely to occur at the particular location.

(3) **Flame-resistant.** Flame-resistant material means material which will not support combustion to the point of propagating, beyond safe limits, a flame after the removal of the ignition source.

(4) **Flash-resistant.** Flash-resistant material means material which will not burn violently when ignited.

(5) **Flammable.** Flammable pertains to those fluids or gases which will ignite readily or explode.

CERTIFICATION

§ 6.10 **Eligibility for type certificates.** A rotorcraft shall be eligible for type certification under the provisions of this part if it complies with the airworthiness provisions hereinafter established or if the Administrator finds that the provision or provisions not complied with

are compensated for by factors which provide an equivalent level of safety: *Provided*, That the Administrator finds no feature or characteristic of the rotorcraft which renders it unsafe.

§ 6.11 **Designation of applicable regulations.** The provisions of this section shall apply to all rotorcraft types certificated under this part irrespective of the date of application for type certificate.

(a) Unless otherwise established by the Board, the rotorcraft shall comply with the provisions of this part together with all amendments thereto effective on the date of application for type certificate, except that compliance with later effective amendments may be elected or required pursuant to paragraphs (c), (d), and (e) of this section.

(b) If the interval between the date of application for type certificate and the issuance of the corresponding type certificate exceeds three years, a new application for type certificate shall be required, except that for applications pending on May 1, 1954, such three-year period shall commence on that date. At the option of the applicant, a new application may be filed prior to the expiration of the three-year period. In either instance the applicable regulations shall be those effective on the date of the new application in accordance with paragraph (a) of this section.

(c) During the interval between filing the application and the issuance of a type certificate, the applicant may elect to show compliance with any amendment of this part which becomes effective during that interval, in which case all other amendments found by the Administrator to be directly related shall be complied with.

(d) Except as otherwise provided by the Board, or by the Administrator pursuant to § 1.24 of this subchapter, a change to the type certificate (see § 6.13 (b)) may be accomplished, at the option of the holder of the type certificate, either in accordance with the regulations incorporated by reference in the type certificate pursuant to § 6.13 (c), or in accordance with subsequent amendments to such regulations in effect on the date of application for approval of the change, subject to the following provisions:

(1) When the applicant elects to show compliance with an amendment to the regulations in effect on the date of application for approval of a change, he shall show compliance with all amendments which the Administrator finds are directly related to the particular amendment selected by the applicant.

(2) When the change consists of a new design or a substantially complete redesign of a component, equipment installation, or system installation of the rotorcraft, and the Administrator finds that the regulations incorporated by reference in the type certificate pursuant to § 6.13 (c) do not provide complete standards with respect to such change, he shall require compliance with such provisions of the regulations in effect on the date of application for approval of the change as he finds will provide a level of safety equal to that established by the regulations incorpo-

¹ For engine airworthiness requirements see Part 13 of this subchapter.

² For propeller airworthiness requirements see Part 14 of this subchapter.

³ See NACA Technical Note No. 1604.

rated by reference at the time of issuance of the type certificate.

Note: Examples of new or redesigned components and installations which might require compliance with regulations in effect on the date of application for approval, are: New powerplant installation which is likely to introduce additional fire or operational hazards unless additional protective measures are incorporated; the installation of a new rotor system or a new electric power system.

(e) If changes listed in subparagraphs (1) through (3) of this paragraph are made, the rotorcraft shall be considered as a new type, in which case a new application for type certificate shall be required and the regulations together with all amendments thereto effective on the date of the new application shall be made applicable in accordance with paragraphs (a), (b), (c), and (d) of this section.

(1) A change in the number of engines or rotors;

(2) A change to engines or rotors employing different principles of operation or propulsion;

(3) A change in design, configuration, power, or weight which the Administrator finds is so extensive as to require a substantially complete investigation of compliance with the regulations.

§ 6.12 Recording of applicable regulations. The Administrator, upon the issuance of a type certificate, shall record the applicable regulations with which compliance was demonstrated. Thereafter, the Administrator shall record the applicable regulations for each change in the type certificate which is accomplished in accordance with regulations other than those recorded at the time of issuance of the type certificate. (See § 6.11.)

§ 6.13 Type certificate. (a) An applicant shall be issued a type certificate when he demonstrates the eligibility of the rotorcraft by complying with the requirements of this part in addition to the applicable requirements in Part 1 of this subchapter.

(b) The type certificate shall be deemed to include the type design (see § 6.14 (b)), the operating limitations for the rotorcraft (see § 6.700), and any other conditions or limitations prescribed by the regulations in this subchapter.

(c) The applicable provisions of this part recorded by the Administrator in accordance with § 6.12 shall be considered as incorporated in the type certificate as though set forth in full.

§ 6.14 Data required. (a) The applicant for a type certificate shall submit to the Administrator such descriptive data, test reports, and computations as are necessary to demonstrate that the rotorcraft complies with the requirements of this part.

(b) The descriptive data required in paragraph (a) of this section shall be known as the type design and shall consist of such drawings and specifications as are necessary to disclose the configuration of the rotorcraft and all the design features covered in the requirements of this part, such information on di-

mensions, materials, and processes as is necessary to define the structural strength of the rotorcraft, and such other data as are necessary to permit by comparison the determination of the airworthiness of subsequent rotorcraft of the same type.

§ 6.15 Inspections and tests. Inspections and tests shall include all those found necessary by the Administrator to insure that the rotorcraft complies with the applicable airworthiness requirements and conforms to the following:

(a) All materials and products are in accordance with the specifications in the type design.

(b) All parts of the rotorcraft are constructed in accordance with the drawings in the type design.

(c) All manufacturing processes, construction, and assembly are as specified in the type design.

§ 6.16 Flight tests. After proof of compliance with the structural requirements contained in this part, and upon completion of all necessary inspections and testing on the ground, and proof of the conformity of the rotorcraft with the type design, and upon receipt from the applicant of a report of flight tests performed by him, the following shall be conducted:

(a) Such official flight tests as the Administrator finds necessary to determine compliance with the requirements of this part.

(b) After the conclusion of flight tests specified in paragraph (a) of this section, such additional flight tests as the Administrator finds necessary to ascertain whether there is reasonable assurance that the rotorcraft, its components, and equipment are reliable and function properly. The extent of such additional flight tests shall depend upon the complexity of the rotorcraft, the number and nature of new design features, and the record of previous tests and experience for the particular rotorcraft type, its components, and equipment. If practicable, these flight tests shall be conducted on the same rotorcraft used in the flight tests specified in paragraph (a) of this section and in the rotor drive endurance tests specified in § 6.412.

§ 6.17 Airworthiness, experimental, and production certificates. (For requirements with regard to these certificates see Part 1 of this subchapter.)

§ 6.18 Approval of materials, parts, processes, and appliances. (a) Materials, parts, processes, and appliances shall be approved upon a basis and in a manner found necessary by the Administrator to implement the pertinent provisions of the regulations in this subchapter. The Administrator may adopt and publish such specifications as he finds necessary to administer this regulation, and shall incorporate therein such portions of the aviation industry, Federal, and military specifications respecting such materials, parts, processes, and appliances as he finds appropriate.

Note: The provisions of this paragraph are intended to allow approval of materials, parts, processes, and appliances under the system of Technical Standard Orders, or in

conjunction with type certification procedures for a rotorcraft, or by any other form of approval by the Administrator.

(b) Any material, part, process, or appliance shall be deemed to have met the requirements for approval when it meets the pertinent specifications adopted by the Administrator, and the manufacturer so certifies in a manner prescribed by the Administrator.

§ 6.19 Changes in type design. (For requirements with regard to changes in type design and the designation of applicable regulations therefor, see § 6.11 (d) and (e), and Part 1 of this subchapter.)

SUBPART B—FLIGHT

GENERAL

§ 6.100 Proof of compliance. (a) Compliance with the requirements prescribed in this subpart shall be established by flight or other tests conducted upon a rotorcraft of the type for which a certificate of airworthiness is sought or by calculations based on such tests, provided that the results obtained by calculations are equivalent in accuracy to the results of direct testing.

(b) Compliance with each requirement shall be established at all appropriate combinations of rotorcraft weight and center of gravity position within the range of loading conditions for which certification is sought by systematic investigation of all these combinations, except where compliance can be inferred reasonably from those combinations which are investigated.

(c) The controllability, stability, and trim of the rotorcraft shall be established at all altitudes up to the maximum anticipated operating altitude.

(d) The applicant shall provide a person holding an appropriate pilot certificate to make the flight tests, but a designated representative of the Administrator shall pilot the rotorcraft when it is found necessary for the determination of compliance with the airworthiness requirements.

(e) Official type tests shall be discontinued until corrective measures have been taken by the applicant when either:

(1) The applicant's test pilot is unable or unwilling to conduct any of the required flight tests, or

(2) It is found that requirements which have not been met are so substantial as to render additional test data meaningless or are of such a nature as to make further testing unduly hazardous.

(f) Adequate provision shall be made for emergency egress and for the use of parachutes by members of the crew during the flight tests.

(g) The applicant shall submit to the authorized representative of the Administrator a report covering all computations and tests required in connection with calibration of instruments used for test purposes and correction of test results to standard atmospheric conditions. The Administrator's representative shall conduct any flight tests which he finds necessary to check the calibration and correction report.

§ 6.101 Weight limitations. The maximum and minimum weights at which the rotorcraft will be suitable for operation shall be established as follows:

(a) Maximum weights shall not exceed any of the following:

(1) The weight selected by the applicant;

(2) The design weight for which the structure has been proven; or

(3) The maximum weight at which compliance with all of the applicable flight requirements has been demonstrated.

(b) The maximum weight shall not be less than the sum of the weights of the following:

(1) The empty weight in accordance with § 6.104;

(2) Usable fuel appropriate to the operation contemplated with full payload;

(3) The full oil capacity; and

(4) 170 pounds in all seats, except that when the maximum permissible weight to be carried in a seat is less than 170 pounds it shall be acceptable to use this lesser weight. (See § 6.738 (a).)

(c) Minimum weights shall not be less than any of the following:

(1) The minimum weight selected by the applicant;

(2) The design minimum weight for which the structure has been proven; or

(3) The minimum weight at which compliance with all of the applicable flight requirements has been demonstrated.

(d) The minimum weight shall not exceed the sum of the weights of the following:

(1) The empty weight in accordance with § 6.104;

(2) The minimum crew necessary to operate the rotorcraft, assuming for each crew member the lowest of the following:

(i) 170 pounds,

(ii) Weight selected by the applicant, and

(iii) Weight included in the loading instructions (see §§ 6.102 (b) and 6.738 (a)); and

(3) Oil in the quantity determined in accordance with the provisions of § 6.440 (b).

§ 6.102 Center of gravity limitations.

(a) Center of gravity limits shall be established as the most forward position permissible for each weight established in accordance with § 6.101 and the most aft position permissible for each of such weights. Such limits of the center of gravity range shall not exceed any of the following:

(1) The extremes selected by the applicant,

(2) The extremes for which the structure has been proven,

(3) The extremes at which compliance with all of the applicable flight requirements has been demonstrated.

(b) Loading instructions shall be provided if the center of gravity position under any possible loading condition between the maximum and minimum weights as specified in § 6.101, with assumed weights for individual passengers and crew members variable over the an-

ticipated range of such weights, lies beyond:

(1) The extremes selected by the applicant,

(2) The extremes for which the structure has been proven,

(3) The extremes for which compliance with all of the applicable flight requirements has been demonstrated. (See § 6.741 (c).)

§ 6.103 Rotor limitations and pitch settings—

(a) **Power-on.** A range of power-on operating speeds for the main rotor(s) shall be established which will provide adequate margin to accommodate the variation of rotor rpm attendant to all maneuvers appropriate to the rotorcraft type and consistent with the type of synchronizer or governor used, if any (see §§ 6.713 (b) (2) and 6.714 (b)). A means shall be provided to prevent rotational speeds substantially less than the approved minimum rotor rpm in any flight condition with pitch control of the main rotor(s) in the high-pitch position, and with the engine(s) operating within the approved limitations. It shall be acceptable for such means to allow the use of higher pitch in an emergency, provided that the means incorporate provisions to prevent inadvertent transition from the normal operating range to the higher pitch angles.

(b) **Power-off.** A range of power-off operating rotor speeds shall be established which will permit execution of all autorotative flight maneuvers appropriate to the rotorcraft type throughout the range of air speeds and weights for which certification is sought (see §§ 6.713 (a) and 6.713 (b) (1)). A rotor blade low-pitch limiting device shall be positioned to provide rotational speeds within the approved rotor speed range in any autorotative flight condition under the most adverse combinations of weight and air speed with the rotor pitch control in the full low-pitch position.

§ 6.104 Empty weight. (a) The empty weight, and the corresponding center of gravity position, shall be determined by weighing the rotorcraft. This weight shall exclude the weight of the crew and payload, but shall include the weight of all fixed ballast, unusable fuel supply (see § 6.421), undrainable oil, total quantity of engine coolant, and total quantity of hydraulic fluid.

(b) The condition of the rotorcraft at the time of weighing shall be one which can be easily repeated and easily defined, particularly as regards the contents of the fuel, oil, and coolant tanks, and the items of equipment installed. (See § 6.740.)

§ 6.105 Use of ballast. Removable ballast may be used to enable the rotorcraft to comply with the flight requirements. (See §§ 6.391, 6.738, and 6.740.)

PERFORMANCE

§ 6.110 General. The performance information prescribed in §§ 6.111 through 6.115 shall be determined, and the rotorcraft shall comply with the corresponding requirements in the standard atmosphere in still air.

§ 6.111 Take-off. The take-off shall be demonstrated at maximum certi-

fied weight, forward center of gravity, and using take-off power at take-off rpm and made in a manner such that a landing can be made safely at any point along the flight path in case of an engine failure and shall not require an exceptional degree of skill on the part of the pilot or exceptionally favorable conditions. Pertinent information concerning the take-off procedure, including the type of take-off surface and appropriate climb-out air speeds, shall be specified in the operating procedures section of the Rotorcraft Flight Manual. (See §§ 6.715, 6.740, and 6.742.)

§ 6.112 Climb. (a) For all rotorcraft, except helicopters, the steady rate of climb at the best rate-of-climb speed with maximum continuous power and landing gear retracted shall be determined over the range of weights, altitudes, and temperatures for which certification is sought (see § 6.740). This rate of climb shall provide a steady angle of climb under standard sea level conditions of not less than 1:6.

(b) For helicopters the best rate-of-climb speed shall be determined at standard sea level conditions at maximum certificated weight with all engines operating at maximum continuous power.

(c) For multiengine helicopters the steady rate of climb or descent shall be determined at maximum certificated weight, at the best rate-of-climb or descent speed, with one engine inoperative, and the remaining engine(s) operating at maximum continuous power.

§ 6.113 Minimum operating speed performance. (a) Hovering ceilings for helicopters shall be determined over the range of weights, altitudes, and temperatures for which certification is sought with take-off power and landing gear extended in the ground effect at a height above the ground consistent with normal take-off procedures.

(b) At maximum weight, under standard atmospheric conditions, and under conditions prescribed in paragraph (a) of this section, the hovering ceiling for helicopters shall not be less than 4,000 feet.

(c) For rotorcraft other than helicopters, the steady rate of climb at the minimum operating speed appropriate to the type with take-off power and landing gear extended shall be determined over the range of weights, altitudes, and temperatures for which certification is sought.

§ 6.114 Autorotative or one-engine-inoperative landing. Landings shall be demonstrated in accordance with the provisions of paragraphs (a) through (d) of this section. Pertinent information concerning the landing procedure, including the type of landing surface and appropriate approach and glide air speeds, shall be specified in the operating procedures section of the Rotorcraft Flight Manual. (See §§ 6.740 and 6.742.)

(a) The approach speed or speeds in the glide shall be appropriate to the type of rotorcraft and shall be chosen by the applicant.

(b) The approach and landing shall be made with power off for single-engine

rotorcraft, and with one engine inoperative for multiengine rotorcraft.

(c) The approach and landing shall be entered from steady autorotation and shall be made in such a manner that its reproduction would not require an exceptional degree of skill on the part of the pilot or exceptionally favorable conditions.

(d) During the landing there shall be no excessive vertical acceleration and no tendency to bounce, nose over, ground loop, porpoise, or water loop.

§ 6.115 *Power-off landings for multiengine rotorcraft.* For all multiengine rotorcraft it shall be possible to make a safe landing following complete failure of all power during normal operating conditions.

FLIGHT CHARACTERISTICS

§ 6.120 *General.* (a) The rotorcraft shall comply with the requirements prescribed in §§ 6.120 through 6.123 at all normally expected operating altitudes, under all critical loading conditions within the range of weight and center of gravity, and for all speeds, power, and rotor rpm conditions for which certification is sought.

(b) It shall be possible to maintain a flight condition and to make a smooth transition from one flight condition to another without requiring an exceptional degree of skill, alertness, or strength on the part of the pilot, and without danger of exceeding the limit load factor under all conditions of operation probable for the type, including those conditions normally encountered in the event of sudden powerplant failure.

(c) For night or instrument certification the rotorcraft shall have such additional flight characteristics as the Administrator finds are required for safe operation under those conditions.

§ 6.121 *Controllability.* (a) The rotorcraft shall be safely controllable and maneuverable during steady flight and during the execution of any maneuver appropriate to the type of rotorcraft, including take-off, climb, level flight, turn, glide, and power-on or power-off landings.

(b) The margin of longitudinal and lateral cyclic control shall allow satisfactory pitching and rolling control at V_{NE} (see § 6.711) with:

- (1) Maximum weight,
- (2) Critical center of gravity,
- (3) Power on and power off, and
- (4) Critical rotor rpm.

(c) Compliance with paragraph (b) of this section shall include a demonstration with a power failure at V_H or V_{NE} whichever is less.

(d) There shall be established a wind velocity in which the rotorcraft can be operated without loss of control on or near the ground at the critical weight and center of gravity and the critical rotor rpm in any maneuver appropriate to the type of rotorcraft; e. g. cross-wind take-offs, sideward or rearward flight. This wind velocity shall not be less than 20 mph.

§ 6.122 *Trim.* It shall be possible in steady level flight at any speed appropriate to the type of rotorcraft to trim

the steady longitudinal and lateral control forces to zero. The trim device shall not introduce any undesirable discontinuities in the force gradients.

§ 6.123 *Stability—(a) General.* It shall be possible to fly the rotorcraft in normal maneuvers, including a minimum of three take-offs and landings, for a continuous period of time appropriate to the operational use of the particular type of rotorcraft without the pilot experiencing undue fatigue or strain. In addition, the rotorcraft shall comply with the requirements of paragraph (b) of this section.

(b) *Static longitudinal stability.* In the following configurations the characteristics of the longitudinal cyclic control shall be such that, with constant throttle and collective pitch settings, a rearward displacement of longitudinal control shall be necessary to obtain and maintain speeds below the specified trim speed, and a forward displacement shall be necessary to obtain and maintain speeds above the specified trim speed for the ranges of altitude and rotor rpm for which certification is sought.

(1) *Climb.* The stick position curve shall have a stable slope over a speed range from 15 percent of V_Y or 15 mph, whichever is greater, below V_Y to 20 percent of V_Y or 15 mph, whichever is greater, above V_Y , but in no case greater than 1.1 V_{NE} , with:

- (i) Critical weight and center of gravity,
- (ii) Maximum continuous power,
- (iii) Landing gear retracted, and
- (iv) Trim at best rate-of-climb speed (V_Y).

(2) *Cruise.* The stick position curve shall have a stable slope over a speed range from 0.7 V_H or 0.7 V_{NE} , whichever is less, to 1.1 V_H or 1.1 V_{NE} , whichever is less, with:

- (i) Critical weight and center of gravity,
- (ii) Power for level flight at 0.9 V_H or 0.9 V_{NE} , whichever is less,
- (iii) Landing gear retracted, and
- (iv) Trimmed at 0.9 V_H or 0.9 V_{NE} , whichever is less.

(3) *Autorotation.* The stick position curve shall have a stable slope throughout the speed range for which certification is sought, with:

- (i) Critical weight and center of gravity,
- (ii) Power off,
- (iii) Landing gear both retracted and extended, and
- (iv) Trim at the speed for minimum rate of descent.

(4) *Hovering.* In the case of helicopters the stick position curve shall have a stable slope between the maximum approved rearward speed and a forward speed of 20 mph, with:

- (i) Critical weight and center of gravity,
- (ii) Power required for hovering in still air,
- (iii) Landing gear retracted, and
- (iv) Trim for hovering.

GROUND AND WATER HANDLING CHARACTERISTICS

§ 6.130 *General.* The rotorcraft shall be demonstrated to have satisfac-

tory ground and water handling characteristics. There shall be no uncontrollable tendencies in any operating condition reasonably expected for the type.

§ 6.131 *Ground resonance.* There shall be no uncontrollable tendency for the rotorcraft to oscillate when the rotor is turning and the rotorcraft is on the ground.

§ 6.132 *Spray characteristics.* For rotorcraft equipped with floats, the spray characteristics during taxiing, take-off, and landing shall be such as not to obscure the vision of the pilot nor produce damage to the rotors, propellers, or other parts of the rotorcraft.

MISCELLANEOUS FLIGHT REQUIREMENTS

§ 6.140 *Flutter and vibration.* All parts of the rotorcraft shall be demonstrated to be free from flutter and excessive vibration under all speed and power conditions appropriate to the operation of the type of rotorcraft. (See also §§ 6.203 (f) and 6.711.)

SUBPART C—STRUCTURE

GENERAL

§ 6.200 *Loads.* (a) Strength requirements of this subpart are specified in terms of limit and ultimate loads. Unless otherwise stated, the specified loads shall be considered as limit loads. In determining compliance with these requirements the provisions set forth in paragraphs (b) through (e) of this section shall apply.

(b) The factor of safety shall be 1.5 unless otherwise specified, and shall apply to the external and inertia loads, unless its application to the resulting internal stresses is more conservative.

(c) Unless otherwise provided, the specified air, ground, and water loads shall be placed in equilibrium with inertia forces, considering all items of mass in the rotorcraft.

(d) All loads shall be distributed in a manner closely approximating or conservatively representing actual conditions.

(e) If deflections under load significantly change the distribution of external or internal loads, the redistribution shall be taken into account.

§ 6.201 *Strength and deformation.* (a) The structure shall be capable of supporting limit loads without suffering detrimental permanent deformations.

(b) At all loads up to limit loads the deformation shall not be such as to interfere with safe operation of the rotorcraft.

(c) The structure shall be capable of supporting ultimate loads without failure. It shall support the load during a static test for at least 3 seconds, unless proof of strength is demonstrated by dynamic tests simulating actual conditions of load application.

§ 6.202 *Proof of structure.* (a) Proof of compliance of the structure with the strength and deformation requirements of § 6.201 shall be made for all critical loading conditions.

(b) Proof of compliance by means of structural analysis shall be acceptable

only when the structure conforms to types for which experience has shown such methods to be reliable. In all other cases substantiating tests shall be required.

(c) In all cases certain portions of the structure shall be tested as specified in § 6.203.

§ 6.203 *Structural and dynamic tests.* At least the following structural tests shall be conducted to show compliance with the strength criteria:

(a) Dynamic and endurance tests of rotors and rotor drives, including controls (see § 6.412).

(b) Control surface and system limit load tests (see § 6.323).

(c) Control system operation tests (see § 6.324).

(d) Flight stress measurements (see §§ 6.221 and 6.250).

(e) Landing gear drop tests (see § 6.237).

(f) Ground vibration tests to determine the natural frequencies of the blades and major structural components of the rotorcraft.

(g) Such additional tests as may be found necessary by the Administrator to substantiate new and unusual features of the design.

§ 6.204 *Design limitations.* The following values shall be established by the applicant for purposes of showing compliance with the structural requirements specified in this subpart:

(a) Maximum design weight.

(b) Power-on and power-off main rotor rpm ranges (see §§ 6.103 and 6.713 through 6.714 (b)).

(c) Maximum forward speeds for the power-on and power-off rotor rpm ranges established in accordance with paragraph (b) of this section (see § 6.711).

(d) Maximum rearward and sideward flight speeds.

(e) Extreme positions of rotorcraft center of gravity to be used in conjunction with the limitations of paragraphs (b), (c), and (d) of this section.

(f) Rotational speed ratios between the powerplant and all connected rotating components, and

(g) Positive and negative limit maneuvering load factors.

FLIGHT LOADS

§ 6.210 *General.* Flight load requirements shall be complied with at all weights from the design minimum weight to the design maximum weight, with any practicable distribution of disposable load within prescribed operating limitations stated in the Rotorcraft Flight Manual. (See § 6.741.)

§ 6.211 *Flight load factors.* The flight load factors shall represent rotor load factors. The net load factor acting at the center of gravity of the rotorcraft shall be obtained by proper consideration of balancing loads acting in the specific flight conditions.

§ 6.212 *Maneuvering conditions.* The rotorcraft structure shall be designed for a positive maneuvering limit load factor of 3.5 and for a negative maneuvering limit load factor of 1.0, except that lesser values shall be allowed if the

manufacturer shows by analytical study and flight demonstrations that the probability of exceeding the values selected is extremely remote. In no case shall the limit load factors be less than 2.0 positive and 0.5 negative. The resultant loads shall be assumed to be applied at the center(s) of the rotor hub(s) and to act in such directions as necessary to represent all critical maneuvering motions of the rotorcraft applicable to the particular type, including flight at the maximum design rotor tip speed ratio under power-on and power-off conditions.

§ 6.213 *Gust conditions.* The rotorcraft structure shall be designed to withstand the loading due to a vertical gust of 30 fps in velocity in conjunction with the critical rotorcraft air speeds, including hovering.

CONTROL SURFACE AND SYSTEM LOADS

§ 6.220 *General.* The structure of all auxiliary rotors (antitorque and control), fixed or movable stabilizing and control surfaces, and all systems operating any flight controls shall be designed to comply with the provisions of §§ 6.221 through 6.225.

§ 6.221 *Auxiliary rotor assemblies.* Auxiliary rotor assemblies shall be tested in accordance with the provisions of § 6.412 for rotor drives. In addition, auxiliary rotor assemblies with detachable blades shall be substantiated for centrifugal loads resulting from the maximum design rotor rpm. In the case of auxiliary rotors with highly stressed metal components, the vibration stresses shall be determined in flight, and it shall be demonstrated that these stresses do not exceed safe values for continuous operation.

§ 6.222 *Auxiliary rotor attachment structure.* The attachment structure for the auxiliary rotors shall be designed to withstand a limit load equal to the maximum loads in the structure occurring under the flight and landing conditions.

§ 6.223 *Tail rotor guard.* When a tail rotor is provided on a rotorcraft it shall not be possible for the tail rotor to contact the landing medium during a normal landing. If a tail rotor guard is provided which will contact the landing medium during landings and thus prevent tail rotor contact, suitable design loads for the guard shall be established, and the guard and its supporting structure shall be designed to withstand the established loads.

§ 6.224 *Stabilizing and control surfaces.* Stabilizing and control surfaces shall be designed to withstand the critical loading from maneuvers or from combined maneuver and gust. In no case shall the limit load be less than 15 pounds per square foot or a load due to $C_N=0.55$ at the maximum design speed. The load distribution shall simulate closely the actual pressure distribution conditions.

§ 6.225 *Primary control systems.* Manual control systems shall comply with the provisions of paragraphs (a) and (b) of this section.

(a) From the pilot compartment to the stops which limit the range of motion of the pilots' controls, the controls shall be designed to withstand the limit pilot applied forces as set forth in subparagraphs (1) through (3) of this paragraph, unless it is shown that the pilot is unable to apply such loads to the system. In the latter event the system shall be designed for the maximum loads which the pilot is able to apply, except that in any case values less than 0.60 of those specified shall not be employed.

(1) Foot type controls—130 pounds.

(2) Stick type controls—fore and aft 100 pounds—laterally 67 pounds.

(3) Wheel type controls—fore and aft 100 pounds—laterally 53-pound couple applied on opposite sides of the control wheel.

(b) From the stops to the attachment of the control system to the rotor blades (or control areas) the control system shall be designed to withstand the maximum loads which can be obtained in normal operation of the rotorcraft, except that where jamming, ground gusts, control inertia, or friction can cause loads exceeding operational loads, the system shall be capable of supporting without yielding 0.60 of the loads specified in paragraph (a) (1), (2), and (3) of this section.

LANDING LOADS

§ 6.230 *General.* (a) *Loads and equilibrium.* The limit loads obtained in the landing conditions shall be considered as external loads which would occur in a rotorcraft structure if it were acting as a rigid body. In each of the conditions the external loads shall be placed in equilibrium with the linear and angular inertia loads in a rational or conservative manner. In applying the specified conditions the provisions of paragraphs (b) through (e) of this section shall be complied with.

(b) *Center of gravity positions.* The critical center of gravity positions within the certification limits shall be selected so that the maximum design loads in each of the landing gear elements are obtained.

(c) *Design weight.* The design weight used in the landing conditions shall not be less than the maximum weight of the rotorcraft. It shall be acceptable to assume a rotor lift, equal to one-half the design maximum weight, to exist throughout the landing impact and to act through the center of gravity of the rotorcraft. Higher values of rotor lift shall be acceptable if substantiated by tests and/or data which are applicable to the particular rotorcraft.

(d) *Load factor.* The structure shall be designed for a limit load factor, selected by the applicant, of not less than the value of the limit inertia load factor substantiated in accordance with the provisions of § 6.237, except in conditions in which other values of load factor are prescribed.

(e) *Landing gear position.* The tires shall be assumed to be in their static position, and the shock absorbers shall be assumed to be in the most critical position, unless otherwise prescribed.

(f) *Landing gear arrangement.* The provisions of §§ 6.231 through 6.236 shall

be applicable to landing gear arrangements where two wheels are located aft and one or more wheels are located forward of the center of gravity.

§ 6.231 Level landing conditions.

(a) Under loading conditions prescribed in paragraph (b) of this section, the rotorcraft shall be assumed to be in the following two level landing attitudes:

(1) All wheels contacting the ground simultaneously, and

(2) The aft wheels contacting the ground while the forward wheel(s) being just clear of the ground.

(b) The following two level landing loading conditions shall be considered. Where the forward portion of the landing gear has two wheels, the total load applied to the forward wheels shall be divided between the two wheels in a 40:60 proportion.

(1) Vertical loads shall be applied in accordance with the provisions of § 6.230.

(2) The vertical loads specified in subparagraph (1) of this paragraph shall be combined with a drag load at each wheel. The drag loads shall not be less than 25 percent of the respective vertical loads. For the attitude prescribed in paragraph (a) (1) of this section the resulting pitching moment shall be assumed resisted by the forward gear, while for the attitude prescribed in paragraph (a) (2) of this section the resulting pitching moment shall be assumed resisted by angular inertia forces.

§ 6.232 Nose-up landing condition. The rotorcraft shall be assumed in the maximum nose-up attitude permitting clearance of the ground by all parts of the rotorcraft. The ground loads shall be applied perpendicularly to the ground.

§ 6.233 One-wheel landing condition. The rotorcraft shall be assumed in the level attitude to contact the ground on one of the wheels located aft of the center of gravity. The vertical load shall be the same as that obtained on the one side in the condition specified in § 6.231 (b) (1). The unbalanced external loads shall be reacted by the inertia of the rotorcraft.

§ 6.234 Lateral-drift landing condition. (a) The rotorcraft shall be assumed in the level landing attitude. Side loads shall be combined with one-half the maximum ground reactions obtained in the level landing conditions of § 6.231 (b) (1). These loads shall be applied at the ground contact point, unless the landing gear is of the full-swiveling type in which case the loads shall be applied at the center of the axle. The conditions set forth in paragraphs (b) and (c) of this section shall be considered.

(b) Only the wheels aft of the center of gravity shall be assumed to contact the ground. Side loads equal to 0.8 of the vertical reaction acting inward (on one side) and 0.6 of the vertical reaction acting outward (on the other side) shall be combined with the vertical loads specified in paragraph (a) of this section.

(c) The forward and aft wheels shall be assumed to contact the ground simultaneously. Side loads on the wheels aft of the center of gravity shall be applied in accordance with paragraph (b) of

this section. A side load at the forward gear equal to 0.8 of the vertical reaction shall be combined with the vertical load specified in paragraph (a) of this section.

§ 6.235 Brake roll conditions. The rotorcraft attitudes shall be assumed to be the same as those prescribed for the level landing conditions in § 6.231 (a), with the shock absorbers deflected to their static position. The limit vertical load shall be based upon a load factor of 1.33. A drag load equal to the vertical load multiplied by a coefficient of friction of 0.8 shall be applied at the ground contact point of each wheel equipped with brakes, except that the drag load need not exceed the maximum value based on limiting brake torque.

§ 6.236 Taxiing condition. The rotorcraft and its landing gear shall be designed for loads which occur when the rotorcraft is taxied over the roughest ground which it is reasonable to expect in normal operation.

§ 6.237 Shock absorption tests. Drop tests shall be conducted in accordance with paragraphs (a) and (b) of this section to substantiate the landing limit inertia load factor (see § 6.230 (d)) and to demonstrate the reserve energy absorption capacity of the landing gear. The drop tests shall be conducted with the complete rotorcraft or on units consisting of wheel, tire, and shock absorber in their proper relation.

(a) Limit drop test. The drop height in the limit drop test shall be 13 inches measured from the lowest point of the landing gear to the ground. A lesser drop height shall be permissible if it results in a drop test contact velocity found by the Administrator to be equal to the greatest probable sinking speed of the rotorcraft at ground contact in power-off landings likely to be made in normal operation of the rotorcraft. In no case shall the drop height be less than 8 inches. If rotor lift is considered (see § 6.230 (c)), it shall be introduced in the drop test by the use of appropriate energy absorbing devices or by the use of an effective mass.

NOTE: In lieu of more rational computations, the following may be employed when use is made of an effective mass:

$$W_e = W \left[\frac{h + (1-L)d}{h+d} \right]; \text{ and } n = n_j \frac{W_e}{W} + L;$$

where:

W_e = the effective weight to be used in the drop test (pounds);

$W = W_M$ for main gear units (pounds), equal to the static reaction on the particular unit with the rotorcraft in the most critical attitude; a rational method may be used in computing a main gear static reaction, taking into consideration the distance between the direction of the main wheel reaction and the aircraft center of gravity;

$W = W_N$ for nose gear units (pounds), equal to the vertical component of the static reaction which would exist at the nose wheel, assuming the mass of the rotorcraft acting at the center of gravity and exerting a force of 1.0g downward and 0.25g forward;

h = specified free drop height (inches);

L = ratio of assumed rotor lift to the rotorcraft weight;

d = deflection under impact of the tire (at the approved inflation pressure) plus the vertical component of the axle travel relative to the drop mass (inches);

n = limit inertia load factor;

n_j = the load factor during impact developed on the mass used in the drop test (i. e., the acceleration dv/dt in g's recorded in the drop test plus 1.0).

(b) Reserve energy absorption drop test. The reserve energy absorption capacity shall be demonstrated by a drop test in which the drop height is equal to 1.5 times the drop height prescribed in paragraph (a) of this section, and the rotor lift is assumed to be not greater than 1.5 times the rotor lift used in the limit drop tests, except that the resultant inertia load factor need not exceed 1.5 times the limit inertia load factor determined in accordance with paragraph (a) of this section. In this test the landing gear shall not collapse.

NOTE: The effect of rotor lift may be considered in a manner similar to that prescribed in paragraph (a) of this section.

§ 6.240 Ski landing conditions. The structure of a rotorcraft equipped with skis shall be designed in compliance with the loading conditions set forth in paragraphs (a) through (c) of this section:

(a) Up load conditions. (1) A vertical load of P_n and a horizontal load of $P_n/4$ shall be applied simultaneously at the pedestal bearings, P being the maximum static weight on each ski when the rotorcraft is loaded to the maximum design weight. The limit load factor n shall be determined in accordance with § 6.230 (d).

(2) A vertical load equal to 1.33 P shall be applied at the pedestal bearings. (For P see subparagraph (1) of this paragraph.)

(b) Side load condition. A side load of 0.35 P_n shall be applied in a horizontal plane perpendicular to the center line of the rotorcraft at the pedestal bearings. (For P see subparagraph (a) (1) of this section.)

(c) Torque load condition. A torque load equal to 1.33 P (ft.-lb.) shall be applied to the ski about the vertical axis through the center line of the pedestal bearings. (For P and n see subparagraph (a) (1) of this section.)

§ 6.245 Float landing conditions. The structure of a rotorcraft equipped with floats shall be designed in compliance with the loading conditions set forth in paragraphs (a) and (b) of this section:

(a) Up load conditions. (1) With the rotorcraft assumed in the static level attitude a load shall be applied so that the resultant water reaction passes vertically through the center of gravity of the rotorcraft. The limit load factor shall be determined in accordance with § 6.230 (d), or shall be assumed to be the same as the load factor determined for the ground type landing gear.

(2) The vertical load prescribed in subparagraph (1) of this paragraph shall be applied together with an aft component equal to 0.25 the vertical component.

(b) Side load condition. The vertical load in this condition equal to 0.75 the

vertical load prescribed in paragraph (a) (1) of this section, divided equally between the floats, shall be applied together with a side component. The total side component shall be equal to 0.25 the total vertical load in this condition and shall be applied to one float only.

MAIN COMPONENT REQUIREMENTS

§ 6.250 *Main rotor structure.* The requirements of paragraphs (a) through (f) of this section shall apply to the main rotor assemblies including hubs and blades.

(a) The hubs, blades, blade attachments, and blade controls which are subject to alternating stresses shall be designed to withstand repeated loading conditions. The stresses of critical parts shall be determined in flight in all attitudes appropriate to the type of rotorcraft throughout the ranges of limitations prescribed in § 6.204. The service life of such parts shall be established by the applicant on the basis of fatigue tests or by other methods found acceptable to the Administrator.

(b) The main rotor structure shall be designed to withstand the critical flight loads prescribed in §§ 6.210 through 6.213.

(c) The main rotor structure shall be designed to withstand the limit loads prescribed in §§ 6.210 through 6.213 under conditions of autorotation necessary for normal operation. The rotor rpm used shall be such as to include the effects of altitude.

(d) The rotor blades, hubs, and flap hinges shall be designed to withstand a loading condition simulating the force of the blade impact against its stop during operation on the ground.

(e) The rotor assembly shall be designed to withstand loadings simulating other critical conditions which might be encountered in normal operation.

(f) The rotor assembly shall be designed to withstand, at all rotational speeds including zero, the maximum torque likely to be transmitted thereto in both directions. If a torque limiting device is provided in the transmission system the design limit torque need not be greater than the torque defined by the limiting device, except that in no case shall the design limit torque be less than the limit torque specified in § 6.251 (c). The design torque shall be distributed to the rotor blades in a rational manner.

§ 6.251 *Fuselage, landing gear, and rotor pylon structure.* The requirements of paragraphs (a) through (d) of this section shall apply to the fuselage, landing gear, and rotor pylon structure.

(a) The structure shall be designed to withstand the critical loads prescribed in §§ 6.210 through 6.213. It shall be permissible to represent the resultant rotor force as a single force applied at the hub attachment point. The balancing and inertia loads occurring under the accelerated flight conditions as well as the thrust from auxiliary rotors shall be considered.

(b) The structure shall be designed to withstand the applicable ground loads prescribed in §§ 6.230 through 6.245.

(c) The engine mount and adjacent fuselage structure shall be designed to

withstand loads occurring in the rotorcraft under the accelerated flight and landing conditions, including the effects of engine torque loads. In the case of engines having 5 or more cylinders, the limit torque shall be obtained by multiplying the mean torque, as defined by the power conditions in § 6.1 (g) (3), by a factor of 1.33. For 4-, 3-, and 2-cylinder engines the factor shall be 2, 3, and 4, respectively.

(d) The structure shall be designed to withstand the loads prescribed in § 6.250 (d) and (f).

EMERGENCY LANDING CONDITIONS

§ 6.260 *General.* The requirements of paragraphs (a) through (c) of this section deal with emergency conditions of landing on land or water in which the safety of the occupants is considered, although it is accepted that parts of the rotorcraft may be damaged.

(a) The structure shall be designed to give every reasonable probability that all of the occupants, if they make proper use of the seats, belts, and other provisions made in the design (see § 6.355), will escape serious injury in the event of a minor crash landing (with wheels up if the rotorcraft is equipped with retractable landing gear) in which the occupants experience the following ultimate inertia forces relative to the surrounding structure.

- (1) Upward 1.5g (downward 4.0g).
- (2) Forward 4.0g.
- (3) Sideward 2.0g.

(b) The use of a lesser value of the downward inertia force specified in paragraph (a) of this section shall be acceptable if it is shown that the rotorcraft structure can absorb the landing loads corresponding with the design maximum weight and an ultimate descent velocity of 5 fps without exceeding the value chosen.

(c) The inertia forces specified in paragraph (a) of this section shall be applied to all items of mass which would be apt to injure the passengers or crew if such items became loose in the event of a minor crash landing, and the supporting structure shall be designed to restrain these items.

SUBPART D—DESIGN AND CONSTRUCTION

GENERAL

§ 6.300 *Scope.* The rotorcraft shall not incorporate design features or details which experience has shown to be hazardous or unreliable. The suitability of all questionable design details or parts shall be established by tests.

§ 6.301 *Materials.* The suitability and durability of all materials used in the rotorcraft structure shall be established on the basis of experience or tests and shall conform to approved specifications which will insure their having the strength and other properties assumed in the design data.

§ 6.302 *Fabrication methods.* The methods of fabrication employed in constructing the rotorcraft structure shall be such as to produce a consistently sound structure. When a fabrication process such as gluing, spot welding, or heat treating requires close control to at-

tain this objective, the process shall be performed in accordance with an approved process specification.

§ 6.303 *Standard fastenings.* All bolts, pins, screws, and rivets used in the structure shall be of an approved type. The use of an approved locking device or method is required for all such bolts, pins, and screws. Self-locking nuts shall not be used on bolts which are subject to rotation in operation.

§ 6.304 *Protection.* (a) All members of the structure shall be suitably protected against deterioration or loss of strength in service due to weathering, corrosion, abrasion, or other causes.

(b) Provision for ventilation and drainage of all parts of the structure shall be made where necessary for protection.

(c) In rotorcraft equipped with floats, special precautions shall be taken against corrosion from salt water, particularly where parts made from different metals are in close proximity.

§ 6.305 *Inspection provisions.* Means shall be provided to permit the close examination of those parts of the rotorcraft which require periodic inspection, adjustment for proper alignment and functioning, and lubrication of moving parts.

§ 6.306 *Material strength properties and design values.* (a) Material strength properties shall be based on a sufficient number of tests of material conforming to specifications to establish design values on a statistical basis.

(b) The design values shall be so chosen that the probability of any structure being understrength because of material variations is extremely remote.

(c) ANC-5, ANC-18, and ANC-23, Part II values shall be used unless shown to be inapplicable in a particular case.

NOTE: ANC-5, "Strength of Metal Aircraft Elements," ANC-18, "Design of Wood Aircraft Structures," and ANC-23, "Sandwich Construction for Aircraft," are published by the Subcommittee on Air Force-Navy-Civil Aircraft Design Criteria, and may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

(d) The strength, detail design, and fabrication of the structure shall be such as to minimize the probability of disastrous fatigue failure.

NOTE: Points of stress concentration are one of the main sources of fatigue failure.

§ 6.307 *Special factors—(a) General.* Where there is uncertainty concerning the actual strength of a particular part of the structure, or where the strength is likely to deteriorate in service prior to normal replacement of the part, or where the strength is subject to appreciable variability due to uncertainties in manufacturing processes and inspection methods, the factor of safety prescribed in § 6.200 (b) shall be multiplied by a special factor of a value such as to make the probability of the part being understrength from these causes extremely remote. The special factors set forth in paragraphs (b) through (d) of this section shall be acceptable for this purpose.

(b) *Casting factors.* (1) Where only visual inspection of a casting is to be

employed, the casting factor shall be 2.0, except that it need not exceed 1.25 with respect to bearing stresses.

(2) It shall be acceptable to reduce the factor of 2.0 specified in subparagraph (1) of this paragraph to a value of 1.25 if such a reduction is substantiated by testing at least three sample castings and if the sample castings as well as all production castings are visually and radiographically inspected in accordance with an approved inspection specification. During these tests the samples shall withstand the ultimate load multiplied by the factor of 1.25 and in addition shall comply with the corresponding limit load multiplied by a factor of 1.15.

(3) Casting factors other than those contained in subparagraphs (1) and (2) of this paragraph shall be acceptable if they are found to be appropriately related to tests and to inspection procedures.

(4) A casting factor need not be employed with respect to the bearing surface of a part if the bearing factor used (see paragraph (c) of this section) is of greater magnitude than the casting factor.

(c) *Bearing factors.* (1) Bearing factors of sufficient magnitude shall be used to provide for the effects of normal relative motion between parts and in joints with clearance (free fit) which are subject to pounding or vibration.

(2) A bearing factor need not be employed on a part if another special factor prescribed in this section is of greater magnitude than the bearing factor.

(d) *Fitting factors.* (1) A fitting factor of at least 1.15 shall be used on all fittings the strength of which is not proven by limit and ultimate load tests in which the actual stress conditions are simulated in the fitting and the surrounding structure. This factor shall apply to all portions of the fitting, the means of attachment, and the bearing on the members joined.

(2) In the case of integral fittings the part shall be treated as a fitting up to the point where the section properties become typical of the member.

(3) The fitting factor need not be employed where a type of joint made in accordance with approved practices is based on comprehensive test data, e. g. continuous joints in metal plating, welded joints, and scarf joints in wood.

(4) A fitting factor need not be employed with respect to the bearing surface of a part if the bearing factor used (see paragraph (c) of this section) is of greater magnitude than the fitting factor.

MAIN ROTOR

§ 6.310 *Main rotor blades; pressure venting and drainage.* Internal pressure venting of the main rotor blades shall be provided. Drain holes shall be provided and, in addition, the blades shall be designed to preclude the possibility of water becoming trapped in any section of the blade.

§ 6.311 *Stops.* The rotor blades shall be provided with stops, as required for the particular design, to limit the travel of the blades about their various hinges. Provision shall be made to keep the

blades from hitting the droop stops except during the starting and stopping of the rotor.

§ 6.312 *Rotor and blade balance.* Rotors and blades shall be mass-balanced to the degree necessary to prevent excessive vibrations and to safeguard against flutter at all speeds up to the maximum forward speed.

§ 6.313 *Rotor blade clearance.* Clearance shall be provided between the main rotor blades and all other parts of the structure to prevent the blades from striking any part of the structure during any operating condition of the rotorcraft.

CONTROL SYSTEMS

§ 6.320 *General.* All controls and control systems shall operate with ease, smoothness, and positiveness appropriate to their function. (See also §§ 6.350 and 6.353.)

§ 6.321 *Control system stops.* (a) All control systems shall be provided with stops which positively limit the range of motion of the pilot's controls.

(b) Control system stops shall be so located in the system that wear, slackness, or take-up adjustments will not affect appreciably the range of travel.

(c) Control system stops shall be capable of withstanding the loads corresponding with the design conditions for the control system.

§ 6.322 *Control system locks.* If a device is provided for locking the control system while the rotorcraft is on the ground or water, the provisions of paragraphs (a) and (b) of this section shall apply.

(a) A means shall be provided to give unmistakable warning to the pilot when the locking device is engaged.

(b) Means shall be provided to preclude the possibility of the lock becoming engaged during flight.

§ 6.323 *Static tests.* Tests shall be conducted on control systems to show compliance with limit load requirements in accordance with the provisions of paragraphs (a) through (c) of this section.

(a) The direction of the test loads shall be such as to produce the most severe loading in the control system.

(b) The tests shall include all fittings, pulleys, and brackets used in attaching the control system to the main structure.

(c) Analyses or individual load tests shall be conducted to demonstrate compliance with the special factor requirements for control system joints subjected to angular motion. (See §§ 6.307 and 6.325.)

§ 6.324 *Operation tests.* An operation test shall be conducted for each control system by operating the controls from the pilot compartment with the entire system loaded to correspond with loads specified for the control system. In this test there shall be no jamming, excessive friction, or excessive deflection.

§ 6.325 *Control system details.* All details of control systems shall be designed and installed to prevent jamming, chafing, and interference from cargo, passengers, and loose objects.

Precautionary means shall be provided in the cockpit to prevent the entry of foreign objects into places where they would jam the control systems. Provisions shall be made to prevent the slapping of cables or tubes against other parts of the rotorcraft.

§ 6.326 *Spring devices.* The reliability of any spring devices used in the control system shall be established by tests simulating service conditions, unless it is demonstrated that failure of the spring will not cause flutter or unsafe flight characteristics.

§ 6.327 *Autorotation control mechanism.* The main rotor blade pitch control mechanism shall be arranged to permit rapid entry into autorotative flight in the event of power failure.

LANDING GEAR

§ 6.335 *Wheels.* Landing gear wheels shall be of an approved type. The maximum static load rating of each wheel shall not be less than the corresponding static ground reaction under the maximum weight of the rotorcraft and the critical center of gravity position. The maximum limit load rating of each wheel shall not be less than the maximum radial limit load determined in accordance with the applicable ground load requirements of this part.

§ 6.336 *Brakes.* A braking device shall be installed, controllable by the pilot and usable during power-off landings, which is adequate to insure:

(a) Counteraction of any normal unbalanced torque when starting or stopping the rotor,

(b) Holding the rotorcraft parked on a 10° slope on a dry, smooth pavement.

§ 6.337 *Tires.* Landing gear wheels shall be equipped with any make or type of tire provided that the tire is a proper fit on the rim of the wheel and provided that the approved tire rating is not exceeded. The maximum static load rating of the tire shall not be less than the static ground reaction obtained at the wheel, assuming the maximum design weight concentrated at the most unfavorable center of gravity position.

§ 6.338 *Skis.* The maximum limit load rating of each ski shall not be less than the maximum limit load determined in accordance with the applicable ground load requirements of this part.

FLOATS

§ 6.340 *General.* The requirements of §§ 6.341 and 6.342 shall apply to the design of floats.

§ 6.341 *Buoyancy (main floats).* (a) Main floats shall have a buoyancy in excess of that required to support the maximum weight of the rotorcraft in fresh water as follows:

(1) 50 percent in the case of single floats;

(2) 60 percent in the case of multiple floats.

(b) Main floats shall contain at least 4 watertight compartments of approximately equal volume.

§ 6.342 *Float strength.* Floats shall be designed for the conditions set forth

in paragraphs (a) and (b) of this section:

(a) *Bag type floats.* Bag type floats shall withstand the maximum pressure differential which might be developed at the maximum altitude for which certification with floats is sought. In addition, the float shall withstand the vertical loads prescribed in § 6.245 (a) distributed along the length of the bag over three-quarters of the projected bag area.

(b) *Rigid floats.* Rigid type floats shall withstand the vertical, horizontal, and side loads prescribed in § 6.245. The loads specified may be distributed along the length of the floats.

PERSONNEL AND CARGO ACCOMMODATIONS

§ 6.350 *Pilot compartment; general.* (a) The arrangement of the pilot compartment and its appurtenances shall provide safety and assurance that the pilot will be able to perform all of his duties and operate the controls in the correct manner without unreasonable concentration and fatigue.

(b) When provision is made for a second pilot, the rotorcraft shall be controllable with equal safety from both seats.

(c) Vibration and noise characteristics of cockpit appurtenances shall not interfere with the safe operation of the rotorcraft.

§ 6.351 *Pilot compartment vision.* The pilot compartment shall be arranged to afford the pilot a sufficiently extensive, clear, and undistorted view for the safe operation of the rotorcraft. During flight in a moderate rain condition the pilot shall have an adequate view of the flight path in normal flight and landing, and have sufficient protection from the elements so that his vision is not unduly impaired. The pilot compartment shall be free of glare and reflections which would interfere with the pilot's vision. For rotorcraft intended for night operation, the demonstration of these qualities shall include night flight tests.

§ 6.352 *Pilot windshield and windows.* All glass panes shall be of a nonsplintering safety type.

§ 6.353 *Controls.* (a) All cockpit controls shall be located to provide convenience in operation and in a manner tending to prevent confusion and inadvertent operation. (See also § 6.737.)

(b) The controls shall be so located and arranged with respect to the pilots' seats that there exists full and unrestricted movement of each control without interference from either the cockpit structure or the pilots' clothing when seated. This shall be demonstrated for individuals ranging from 5' 2" to 6' 0" in height.

§ 6.354 *Doors.* Closed cabins shall be provided with at least one adequate and easily accessible external door. No passenger door shall be so located with respect to the rotor discs as to endanger persons using the door.

§ 6.355 *Seats and berths.* On rotorcraft, manufactured on or after the effective date of this part (January 15, 1951), all seats and berths, including

their supporting structure, shall be designed for the loads resulting from all specified flight and landing conditions, including the emergency landing conditions of § 6.260. Reactions from safety belts and harnesses shall be taken into account. In addition, pilot seats shall be designed for the reactions resulting from the application of pilot forces to the flight controls as prescribed in § 6.225 (a). (See § 6.101 (b) (4) for weight of occupants.)

§ 6.356 *Cargo and baggage compartments.* (See also § 6.382.) (a) Each cargo and baggage compartment shall be designed for the placarded maximum weight of contents and the critical load distributions at the appropriate maximum load factors corresponding with all specified flight and ground load conditions, excluding the emergency landing conditions of § 6.260.

(b) Provision shall be made to prevent the contents in the compartments from becoming a hazard by shifting under the loads specified in paragraph (a) of this section.

(c) Provision shall be made to protect the passengers and crew from injury by the contents of any compartment when the ultimate inertia force acting forward is 4g.

§ 6.357 *Emergency exits.* (a) Closed cabins on rotorcraft carrying more than 5 persons shall be provided with an emergency exit. Additional exits shall be provided where the total seating capacity is more than 15. The provisions of subparagraphs (1) through (6) of this paragraph shall apply. (See also § 6.738 (c).)

(1) An emergency exit shall consist of a movable window or panel or of an additional external door which provides a clear and unobstructed opening, the minimum dimensions of which shall be such that a 19 inch by 26 inch ellipse may be completely inscribed therein.

(2) An emergency exit shall be readily accessible, shall not require exceptional agility of a person using it, and shall be so located as to facilitate egress without crowding in all probable attitudes in which the rotorcraft may be after a crash.

(3) The method of opening an emergency exit shall be simple and obvious and the exit shall be so arranged and marked as to be readily located and operated even in darkness.

(4) Reasonable provisions shall be made against the jamming of emergency exits as a result of fuselage deformation.

(5) At least one emergency exit shall be on the opposite side of the cabin from the main door.

(6) The proper functioning of emergency exits shall be demonstrated by tests.

§ 6.358 *Ventilation.* The ventilating system for the pilot and passenger compartments shall be so designed as to preclude the presence of excessive quantities of fuel fumes and carbon monoxide. The concentration of carbon monoxide shall not exceed 1 part in 20,000 parts of air under conditions of forward flight or hovering in zero wind. For other conditions of operation, if the car-

bon monoxide concentration exceeds this value, suitable operating restrictions shall be provided.

FIRE PREVENTION

§ 6.380 *General.* The fire prevention requirements of this subpart apply to personnel and cargo compartments. Additional fire prevention requirements are prescribed in Subpart E, Powerplant Installation, and Subpart F, Equipment.

§ 6.381 *Cabin interiors.* All compartments occupied or used by the crew or passengers shall comply with the provisions of paragraphs (a) through (c) of this section.

(a) The materials in no case shall be less than flash-resistant.

(b) The wall and ceiling linings, the covering of all upholstery, floors, and furnishings shall be flame-resistant.

(c) Compartments where smoking is to be permitted shall be equipped with ash trays of the self-contained type which are completely removable. All other compartments shall be placarded against smoking.

§ 6.382 *Cargo and baggage compartments.* Cargo and baggage compartments shall be constructed of or completely lined with fire-resistant material, except that flame-resistant materials shall be acceptable in compartments which are readily accessible to a crew member in flight. Compartments shall include no controls, wiring, lines, equipment, or accessories the damage or failure of which would affect the safe operation of the rotorcraft, unless such items are shielded, isolated, or otherwise protected so that they cannot be damaged by movement of cargo in the compartment, and so that any breakage or failure of such items will not create a fire hazard.

§ 6.383 *Heating systems—(a) General.* Heating systems involving the passage of cabin air over or in close proximity to the exhaust manifold shall not be used unless precautions are incorporated in the design to prevent the introduction of carbon monoxide into the cabin or pilot compartment.

(b) *Heat exchangers.* Heat exchangers shall be constructed of suitable materials, shall be cooled adequately under all conditions, and shall be capable of easy disassembly for inspection.

(c) *Combustion heaters.* Gasoline-operated combustion heaters shall be of an approved type and shall be installed so as to comply with the applicable sections of the powerplant installation requirements covering fire hazards and precautions. All applicable requirements concerning fuel tanks, lines, and exhaust systems shall be considered. (See §§ 6.422 through 6.428 and 6.463.)

§ 6.384 *Fire protection of structure, controls, and other parts.* All structure, controls, rotor mechanism, and other parts essential to a controlled landing of the rotorcraft which would be affected by powerplant fires shall either be of fireproof construction or shall be otherwise protected, so that they can perform their essential functions for at least 5 minutes under all foreseeable power-

plant fire conditions. (See also §§ 6.430 and 6.483 (a).)

MISCELLANEOUS

§ 6.390 *Leveling marks.* Reference marks shall be provided for use in leveling the rotorcraft to facilitate weight and balance determinations on the ground.

§ 6.391 *Ballast provisions.* Ballast provisions shall be so designed and constructed as to prevent the inadvertent shifting of the ballast in flight. (See also §§ 6.105, 6.738, and 6.741 (c).)

SUBPART E—POWERPLANT INSTALLATION

GENERAL

§ 6.400 *Scope and general design.* (a) The powerplant installation shall be considered to include all components of the rotorcraft which are necessary for its propulsion with the exception of the structure of the main and auxiliary rotors. It shall also be considered to include all components which affect the control of the major propulsive units or which affect their safety of operation between normal inspections or overhaul periods. (See §§ 6.604 and 6.613 for instrument installation and marking.) The general provisions of paragraphs (b) through (d) of this section shall be applicable.

(b) All components of the powerplant installation shall be constructed, arranged, and installed in a manner which will assure their continued safe operation between normal inspections or overhaul periods.

(c) Accessibility shall be provided to permit such inspection and maintenance as is necessary to assure continued airworthiness.

(d) Electrical interconnections shall be provided to prevent the existence of differences of potential between major components of the powerplant installation and other portions of the rotorcraft.

§ 6.401 *Engine-type certification.* All engines shall be type certificated in accordance with the provisions of Part 13 of this subchapter.

§ 6.402 *Engine vibration.* The engine shall be installed to preclude harmful vibration of any of the engine parts or of any of the components of the rotorcraft. It shall be demonstrated by means of a vibration investigation that the addition of the rotor and the rotor drive system to the engine does not result in modification of engine vibration characteristics to the extent that the principal rotating portions of the engine are subjected to excessive vibratory stresses. It shall also be demonstrated that no portion of the rotor drive system is subjected to excessive vibratory stresses.

ROTOR DRIVE SYSTEM

§ 6.410 *Rotor drive mechanism.* The rotor drive mechanism shall incorporate a unit which will automatically disengage the engine from the main and auxiliary rotors in the event of power failure. The rotor drive mechanism shall be so arranged that all rotors necessary for control of the rotorcraft in autorotative flight will continue to be driven by the main rotor(s) after disengagement of

the engine from the main and auxiliary rotors. If a torque limiting device is employed in the rotor drive system (see § 6.250 (f)), such device shall be located to permit continued control of the rotorcraft after it becomes operative.

§ 6.411 *Rotor brakes.* If a means is provided to control the rotation of the rotor drive system independent of the engine, the limitations on the use of such means shall be specified, and the control for this means shall be guarded to prevent inadvertent operation.

§ 6.412 *Rotor drive and control mechanism endurance tests.* (a) The rotor drive and control mechanism shall be tested for not less than 100 hours. The test shall be conducted on the rotorcraft, and the power shall be absorbed by the actual rotors to be installed, except that the use of other ground or flight test facilities with any other appropriate method of power absorption shall be acceptable provided that all conditions of support and vibration closely simulate the conditions which would exist during a test on the actual rotorcraft. The endurance tests shall include the tests prescribed in paragraphs (b) through (g) of this section. At the conclusion of the endurance testing, all parts shall be in a serviceable condition.

(b) A 60-hour portion of the endurance test shall be run at not less than the maximum continuous engine speed in conjunction with maximum continuous engine power. In this test the main rotor shall be set in the position which will give maximum longitudinal cyclic pitch change to simulate forward flight. The auxiliary rotor controls shall be in the position for normal operation under the conditions of the test.

(c) A 30-hour portion of the endurance test shall be run at not less than 90 percent of maximum continuous engine speed and 75 percent of maximum continuous engine power. The main and auxiliary rotor controls during this test shall be in the position for normal operation under the conditions of the test.

(d) A 10-hour portion of the endurance test shall be run at not less than take-off engine power and speed. The main and auxiliary rotor controls shall be in the normal position for vertical ascent during this test.

(e) The portions of the endurance test prescribed in paragraphs (b) and (c) of this section shall be conducted in intervals of not less than 30 minutes and may be accomplished either on the ground or in flight. The portion of the endurance test prescribed in paragraph (d) of this section may be conducted in intervals of 5 minutes or more.

(f) At intervals of not more than every 5 hours during the endurance tests prescribed in paragraphs (b), (c), and (d) of this section the engine shall be stopped rapidly enough to allow the engine and rotor drive to be automatically disengaged from the rotors.

(g) There shall be accomplished under the operating conditions specified in paragraph (b) of this section 500 complete cycles of lateral control and 500 complete cycles of longitudinal control of the main rotors, and 500 complete

cycles of control of all auxiliary rotors. A complete control cycle shall be considered to involve movement of the controls from the neutral position, through both extreme positions, and back to the neutral position, except that control movement need not produce loads or flapping motions exceeding the maximum loads or motions encountered in flight. The control cycling may be accomplished during the testing prescribed in paragraph (b) of this section or may be accomplished separately.

§ 6.413 *Additional tests.* Such additional dynamic, endurance, and operational tests or vibratory investigations shall be conducted as are found necessary by the Administrator to substantiate the airworthiness of the rotor drive mechanism.

§ 6.414 *Shafting critical speed.* The critical speeds of all shafting shall be determined by actual demonstration, except that analytical methods shall be acceptable for determining these speeds if the Administrator finds that reliable methods of analysis are available for the particular design. If the critical speeds lie within or close to the operating ranges for idling, power-on, and autorotative conditions, it shall be demonstrated by tests that the resultant stresses are within safe limits. If analytical methods are used and indicate that no critical speeds lie within the permissible operating ranges, the margins between the calculated critical speeds and the limits of the permissible operating ranges shall be adequate to allow for possible variations of the computed values from actual values.

§ 6.415 *Shafting joints.* All universal joints, slip joints, and other shafting joints shall have provision for lubrication, unless it is demonstrated that lack of lubrication will have no adverse effect on the operation of the rotorcraft.

FUEL SYSTEM

§ 6.420 *Capacity and feed.* The fuel supply system shall be arranged so that, in so far as practicable, the entire fuel supply can be utilized in the maximum inclinations of the fuselage for any sustained conditions of flight, and so that the feed ports will not be uncovered during normal maneuvers involving moderate rolling or sideslipping. On rotorcraft with more than one fuel tank (see § 6.422 (e)) the system shall feed fuel promptly after one tank is turned off and another tank is turned on, and there shall be installed in addition to the fuel quantity indicator (see § 6.604 (a) (1)) a warning device to indicate when the fuel in any tank becomes low.

NOTE: The fuel in any tank is considered to be low when there remains approximately a five-minute supply with the rotorcraft in the most critical sustained flight attitude.

§ 6.421 *Unusable fuel supply.* The unusable fuel supply in each tank shall be that quantity at which the first evidence of malfunctioning occurs in any sustained flight condition at the most critical weight and center of gravity position within the approved limitations. The

unusable fuel supply shall be determined for each tank used in normal operation. (See also §§ 6.104, 6.736, and 6.741 (g).)

§ 6.422 *Fuel tank construction and installation.* Fuel tanks shall be designed and installed in accordance with the provisions of paragraphs (a) through (e) of this section.

(a) Fuel tanks shall be capable of withstanding without failure all vibration, inertia, fluid, and structural loads to which they may be subjected in operation.

(b) Fuel tanks shall be capable of withstanding, without failure or leakage, an internal pressure equal to the pressure developed during the maximum limit acceleration with full tanks, except that in no case shall the minimum internal pressure be less than 3.5 lb./sq. in. for conventional type tanks or less than 2.0 lb./sq. in. for bladder type tanks.

(c) Fuel tanks of 10 gallons or greater capacity shall incorporate internal baffles unless external support is provided to resist surging.

(d) Fuel tanks shall be separated from the engine compartment by a fire wall. At least one-half inch clear air space shall be provided between the tank and fire wall.

(e) Spaces adjacent to the surfaces of fuel tanks shall be ventilated so that fumes cannot accumulate in the tank compartment in case of leakage. If two or more tanks have their outlets interconnected, they shall be considered as one tank. The air spaces in such tanks shall be interconnected to prevent the flow of fuel from one tank to another as a result of a difference in pressure in the respective tank air spaces.

§ 6.423 *Fuel tank details—(a) Expansion space.* Fuel tanks shall be provided with an expansion space of not less than 2 percent of the tank capacity. It shall not be possible to fill the fuel tank expansion space inadvertently when the rotorcraft is in the normal ground attitude.

(b) *Sump.* Each fuel tank shall incorporate a sump and drain located at the point in the tank which is the lowest when the rotorcraft is in the normal ground attitude. The main fuel supply shall not be drawn from the bottom of the sump.

(c) *Filler connection.* The design of fuel tank filler connections shall be such as to prevent the entrance of fuel into the fuel tank compartment or to any other portion of the rotorcraft other than the tank itself. (See also § 6.738 (b) (1).)

(d) *Vents.* Fuel tanks shall be vented from the top portion of the expansion space in such a manner that venting of the tank is effective under all normal flight conditions. The air vents shall be arranged to minimize the possibility of stoppage by dirt or ice formation.

(e) *Outlet.* Fuel tank outlets shall be provided with large-mesh finger strainers.

§ 6.424 *Fuel pumps.* If a mechanical pump is employed, an emergency pump shall also be installed to be available for immediate use in case of failure of the mechanical pump. Pumps of appropri-

ate capacity may also be used for pumping fuel from an auxiliary tank to a main fuel tank. Mechanical pump systems shall be so arranged that they cannot feed from more than one tank at a time.

§ 6.425 *Fuel system lines and fittings.* (a) Fuel lines shall be installed and supported to prevent excessive vibration and to withstand loads due to fuel pressure and due to accelerated flight conditions.

(b) Fuel lines which are connected to components of the rotorcraft between which relative motion could exist shall incorporate provisions for flexibility.

(c) Flexible hose shall be of an approved type.

(d) All fuel lines and fittings shall be of sufficient size so that the fuel flow, with the fuel being supplied to the carburetor at the minimum pressure for proper carburetor operation, is not less than the following:

(1) For gravity feed systems: 1.5 times the normal flow required to operate the engine at take-off power;

(2) For pump systems: 1.25 times the normal flow required to operate the engine at take-off power.

(e) Design factors conducive to vapor lock, such as vertical humps in the lines, shall be avoided.

(f) A test for proof of compliance with the applicable flow requirements shall be conducted.

§ 6.426 *Valves.* A positive and quick-acting valve which will shut off all fuel to each engine individually shall be provided. The control for this valve shall be within easy reach of appropriate flight personnel. In the case of rotorcraft employing more than one source of fuel supply, provision shall be made for independent feeding from each source. The shutoff valve shall not be located closer to the engine than the remote side of the fire wall.

§ 6.427 *Strainers.* A strainer incorporating a sediment trap and drain shall be provided in the fuel system between the fuel tanks and the engine and shall be installed in an accessible position. The screen shall be easily removable for cleaning. If an engine-driven fuel pump is provided, the strainer shall be located between the fuel tank and the pump.

§ 6.428 *Drains.* One or more accessible drains shall be provided at the lowest point in the fuel system to drain completely all parts of the system when the rotorcraft is in its normal position on level ground. Such drains shall discharge clear of all parts of the rotorcraft and shall be equipped with safety locks to prevent accidental opening.

§ 6.429 *Fuel quantity indicator.* The fuel quantity indicator (see § 6.613 (b)) shall be installed to indicate clearly to the flight crew the quantity of fuel in each tank while in flight. When two or more tanks are closely interconnected by a gravity feed system and vented, and when it is impossible to feed from each tank separately, only one fuel quantity indicator need be installed. If exposed sight gauges are employed they shall be installed and guarded to preclude the possibility of breakage or damage.

OIL SYSTEM

§ 6.440 *General.* (a) Each engine shall be provided with an independent oil system capable of supplying the engine with an appropriate quantity of oil at a temperature not exceeding the maximum which has been established as safe for continuous operation. (For oil system instruments see §§ 6.604 and 6.735.)

(b) The usable oil capacity shall not be less than the product of the endurance of the rotorcraft under critical operating conditions and the maximum oil consumption of the engine under the same conditions, to which product a suitable margin shall be added to assure adequate circulation and cooling of the oil system. In lieu of a rational analysis of rotorcraft endurance and oil consumption, the usable oil capacity of 1 gallon for each 40 gallons of usable fuel quantity shall be considered acceptable. (See also § 6.101 (d) (3).)

(c) The ability of the oil cooling provisions to maintain the oil inlet temperature to the engine at or below the maximum established value shall be demonstrated by flight tests.

§ 6.441 *Oil tank construction and installation.* Oil tanks shall be designed and installed in accordance with the provisions of paragraphs (a) through (e) of this section.

(a) Oil tanks shall be capable of withstanding without failure all vibration, inertia, fluid, and structural loads to which they may be subjected in operation.

(b) Oil tanks shall be capable of withstanding without failure or leakage an internal pressure of 5 lb./sq. in.

(c) Oil tanks shall be provided with an expansion space of not less than 10 percent of the tank capacity, nor less than one-half gallon.

(d) Oil tanks shall be vented.

(e) Provision shall be made in the filler opening to prevent oil overflow from entering the compartment in which the oil tank is located. (See also § 6.738 (b) (2).)

§ 6.442 *Oil lines and fittings.* (a) Oil lines shall be supported to prevent excessive vibration.

(b) Oil lines which are connected to components of the rotorcraft between which relative motion could exist shall incorporate provisions for flexibility.

(c) Flexible hose shall be of an approved type.

(d) Oil lines shall have an inside diameter not less than the inside diameter of the engine inlet or outlet, and shall have no splices between connections.

§ 6.443 *Oil drains.* One or more accessible drains shall be provided at the lowest point in the oil system to drain completely all parts of the system when the rotorcraft is in its normal position on level ground. Such drains shall discharge clear of all parts of the rotorcraft and shall be equipped with safety locks to prevent accidental opening.

§ 6.444 *Oil quantity gauge.* An oil quantity indicator (see § 6.735) shall be installed to indicate during the filling

operation the amount of oil in the oil tank.

§ 6.445 Oil temperature indication. A means shall be provided for measuring during flight the oil temperature at the engine inlet. If a separate oil system is provided for the main rotor drive, a means shall also be provided to give a warning in flight when the oil temperature has exceeded a safe value. (See § 6.604.)

§ 6.446 Oil pressure indication. If the main rotor drive incorporates an independent oil pressure system, a means shall be provided to give a warning in flight when the oil pressure has fallen below a safe value.

COOLING SYSTEM

§ 6.450 General. The cooling system shall be capable of maintaining engine temperatures within safe operating limits under all conditions of flight during a period at least equal to that established by the fuel capacity of the rotorcraft, assuming normal engine power and speeds.

§ 6.451 Cooling tests. Compliance with the provisions of § 6.450 shall be demonstrated in flight tests in which engine temperature measurements are obtained under critical flight conditions. Such tests shall be conducted in air at temperatures corresponding with the maximum anticipated air temperatures as specified in paragraph (a) of this section. If the tests are conducted under conditions which deviate from the maximum anticipated air temperature, the recorded powerplant temperatures shall be corrected in accordance with the provisions of paragraphs (b) and (c) of this section. The corrected temperatures determined in this manner shall not exceed the maximum established safe values. The fuel used during the cooling tests shall be of the minimum octane number approved for the engines involved, and the mixture settings shall be those used in normal operation.

(a) **Maximum anticipated air temperature.** The maximum anticipated air temperature (hot day condition) shall be 100° F. at sea level, decreasing from this value at the rate of 3.6° F. per thousand feet of altitude above sea level until a temperature of -67° F. is reached above which altitude the temperature shall be constant at -67° F.

(b) **Correction factor for cylinder head and oil inlet temperatures.** The cylinder head and oil inlet temperatures shall be corrected by adding the difference between the maximum anticipated air temperature and the temperature of the ambient air at the time of the first occurrence of maximum cylinder head or oil inlet temperature recorded during the cooling test, unless a more rational correction is shown to be applicable.

(c) **Correction factor for cylinder barrel temperatures.** Cylinder barrel temperatures shall be corrected by adding 0.7 of the difference between the maximum anticipated air temperature and the temperature of the ambient air at the time of the first occurrence of the maximum cylinder barrel temperature recorded during the cooling test, unless

a more rational correction is shown to be applicable.

INDUCTION AND EXHAUST SYSTEMS

§ 6.460 General. The induction and exhaust systems shall be designed in accordance with accepted practice.

§ 6.461 Air induction. (a) The engine air induction system shall be designed to supply the proper quantity of air to the engine under all conditions of operation.

(b) Cold air intakes shall open completely outside the cowling unless the emergence of backfire flames is positively prevented.

(c) Carburetor air intakes shall be provided with drains. The drains shall not discharge fuel in the possible path of exhaust flames.

§ 6.462 Induction system de-icing and anti-icing provisions. (a) The engine air induction system shall incorporate means for the prevention and elimination of ice accumulations. Unless it is demonstrated that this can be accomplished by other means, compliance with the following heat rise provisions shall be demonstrated in air free of visible moisture at a temperature of 30° F. when the engine is operating at 75 percent of its maximum continuous power.

(b) Rotorcraft equipped with sea level engines employing conventional venturi carburetors shall have a preheater capable of providing a heat rise of 90° F.

(c) Rotorcraft equipped with sea level engines employing carburetors which embody features tending to reduce the possibility of ice formation shall be provided with a sheltered alternate source of air. The preheat supplied to this alternate air intake shall be not less than that provided by the engine cooling air downstream of the cylinders.

(d) Rotorcraft equipped with altitude engines employing conventional venturi carburetors shall have a preheater capable of providing a heat rise of 120° F.

(e) Rotorcraft equipped with altitude engines employing carburetors which embody features tending to reduce the possibility of ice formation shall have a preheater capable of providing a heat rise of 100° F., except that if a fluid de-icing system is used the heat rise need not be greater than 40° F.

§ 6.463 Exhaust manifolds. (See also § 6.383.) (a) Exhaust manifolds shall be designed to provide for expansion, and shall be arranged and cooled so that local hot points cannot form.

(b) Exhaust manifolds shall be installed in accordance with the provisions of subparagraphs (1) through (3) of this paragraph:

(1) Exhaust manifolding shall be such that exhaust gases are discharged clear of cowling, rotorcraft structure, carburetor air intake, and fuel system parts or drains.

(2) Exhaust manifolding shall not be located immediately adjacent to or under the carburetor or fuel system parts unless such parts are protected against leakage.

(3) Exhaust manifolding shall be such that exhaust gases do not discharge in a

manner which would impair pilot vision at night due to glare.

POWERPLANT CONTROLS AND ACCESSORIES

§ 6.470 Powerplant controls; general. The provisions of § 6.353 shall be applicable to all powerplant controls with respect to location and arrangement, and the provisions of § 6.737 shall be applicable to all powerplant controls with respect to marking. All flexible powerplant controls shall be of an approved type.

§ 6.471 Throttle controls. (a) A separate throttle control shall be provided for each engine. Throttle controls shall be grouped and arranged to permit separate control of each engine and also simultaneous control of all engines.

(b) Throttle controls shall afford a positive and immediately responsive means of controlling the engines.

§ 6.472 Ignition switches. (a) Means shall be provided for quickly shutting off all ignition by the grouping of switches or by providing a master ignition control.

(b) If a master ignition control is provided, a guard shall be incorporated to prevent inadvertent operation of the control.

§ 6.473 Mixture controls. If mixture controls are provided, a separate control shall be provided for each engine. The mixture controls shall be grouped and arranged to permit separate control of each engine and also simultaneous control of all engines.

§ 6.474 Powerplant accessories. Engine mounted accessories shall be of a type approved for installation on the engine involved and shall utilize the provisions made on the engine for mounting.

POWERPLANT FIRE PROTECTION

§ 6.480 General. The powerplant installation shall be protected against fire in accordance with §§ 6.481 through 6.484. Additional fire prevention requirements are prescribed in Subpart D, Design and Construction, and Subpart F, Equipment.

NOTE: The powerplant fire protection provisions are intended to insure that the main and auxiliary rotors and controls remain operable, the essential rotorcraft structure remains intact, and that the passengers and crew are otherwise protected for a period of at least 5 minutes after the start of an engine fire to permit a controlled autorotational landing.

§ 6.481 Ventilation. Compartments which include powerplant installation shall have provision for ventilation.

§ 6.482 Shutoff means. Means shall be provided to shut off the flow in all lines carrying flammable fluids into the engine compartment, except that a shutoff means need not be provided in lines forming an integral part of an engine. Provision shall be made to guard against inadvertent operation of the shutoff means, and to make it possible for the crew to reopen the shutoff means in flight after it has once been closed. Shutoff valves and their controls shall be located on the remote side of the fire wall from the engine, unless it is shown

that the valve will perform its intended functions under all fire conditions likely to result from an engine fire. In installations using engines of less than 500 cu. in. displacement, shutoff means need not be provided for engine oil systems.

§ 6.483 *Fire wall.* (a) Engines shall be isolated from personnel compartments by means of fire walls, shrouds, or other equivalent means. They shall be similarly isolated from the structure, controls, rotor mechanism, and other parts essential to a controlled landing of the rotorcraft, unless such parts are protected in accordance with the provisions of § 6.384. All auxiliary power units, fuel-burning heaters, and other combustion equipment which are intended for operation in flight shall be isolated from the remainder of the rotorcraft by means of fire walls, shrouds, or other equivalent means. In complying with the provisions of this paragraph, account shall be taken of the probable path of a fire as affected by the air flow in normal flight and in autorotation. (See also § 6.486.)

(b) Fire walls and shrouds shall be constructed in such a manner that no hazardous quantity of air, fluids, or flame can pass from the engine compartment to other portions of the rotorcraft.

(c) All openings in the fire wall or shroud shall be sealed with close fitting fireproof grommets, bushings, or fire-wall fittings.

(d) Fire walls and shrouds shall be constructed of fireproof material and shall be protected against corrosion.

§ 6.484 *Engine cowling and engine compartment covering.* (a) Cowling or engine compartment covering shall be constructed and supported so as to make it capable of resisting all vibration, inertia, and air loads to which it would be subjected in operation.

(b) Provision shall be made to permit rapid and complete drainage of all portions of the cowling or engine compartment in all normal ground and flight attitudes. Drains shall not discharge in locations which might cause a fire hazard.

(c) Cowling or engine compartment covering shall be constructed of fire-resistant material.

(d) Those portions of the cowling or engine compartment covering which would be subjected to high temperatures due to their proximity to exhaust system parts or exhaust gas impingement shall be constructed of fireproof material.

§ 6.485 *Lines and fittings.* All lines and fittings carrying flammable fluids or gases in areas subject to engine fire conditions shall comply with the provisions of paragraphs (a) through (c) of this section.

(a) Lines and fittings which are under pressure, or which attach directly to the engine, or which are subject to relative motion between components shall be flexible, fire-resistant lines with fire-resistant end fittings of the permanently attached, detachable, or other approved types. The provisions of this paragraph shall not apply to those lines and fittings which form an integral part of the engine.

(b) Lines and fittings which are not subject to pressure or to relative motion between components shall be of fire-resistant materials.

(c) Vent and drain lines and fittings shall be subject to the provisions of paragraphs (a) and (b) of this section unless a failure of such line or fitting will not result in, or add to, a fire hazard.

§ 6.486 *Flammable fluids.* (a) Fuel tanks shall be isolated from the engine by a fire wall or shroud. On all rotorcraft having engines of more than 900 cu. in. displacement, oil tanks and other flammable fluid tanks shall be similarly isolated unless the fluid contained, the design of the system, the materials used in the tank, the shutoff means, all connections, lines, and controls are such as to provide an equally high degree of safety.

(b) Not less than one-half inch of clear air space shall be provided between any tank and the isolating fire wall or shroud, unless other equivalent means are used to protect against heat transfer from the engine compartment to the flammable fluid.

SUBPART F—EQUIPMENT

GENERAL

§ 6.600 *Scope.* The required basic equipment as prescribed in this subpart is the minimum which shall be installed in the rotorcraft for certification. Such additional equipment as is necessary for a specific type of operation is prescribed in the operating rules of the regulations in this subchapter.

§ 6.601 *Functional and installation requirements.* Each item of equipment installed in a rotorcraft shall be:

(a) Of a type and design appropriate to perform its intended function;

(b) Labeled as to its identification, function, or operational limitations, or any combination of these, whichever is applicable;

(c) Installed in accordance with specified limitations of the equipment; and

(d) Demonstrated to function properly in the rotorcraft.

§ 6.602 *Required basic equipment.* The equipment listed in §§ 6.603 through 6.605 shall be the required basic equipment. (See § 6.600.)

§ 6.603 *Flight and navigational instruments.* (See § 6.612 for installation requirements.) There shall be installed:

(a) An air-speed indicator. (See § 6.612 (a).)

(b) An altimeter.

(c) A magnetic direction indicator. (See § 6.612 (c).)

§ 6.604 *Powerplant instruments.* (See § 6.613 for installation requirements.)

(a) For each engine or tank there shall be installed:

(1) A fuel quantity indicator. (See § 6.613 (b).)

(2) An oil pressure indicator.

(3) An oil temperature indicator. (See § 6.613 (g).)

(4) A tachometer to indicate engine rpm and rotor rpm for the main rotor, or for each main rotor the speed of which can vary appreciably with respect to another main rotor.

(b) For each engine or tank (if required in reference section) there shall be installed:

(1) A cylinder head temperature indicator. (See § 6.613 (e).)

(2) A fuel pressure indicator (if pumped engines are used).

(3) A manifold pressure indicator (if altitude engines are used).

(4) An oil quantity indicator. (See § 6.613 (d).)

(c) For each transmission or gear box having an independent oil system there shall be installed:

(1) An oil temperature indicator, and

(2) An oil pressure indicator if a pressure system is employed.

§ 6.605 *Miscellaneous equipment.* There shall be installed:

(a) Approved seats for all occupants. (See § 6.355.)

(b) Approved safety belts for all occupants. (See § 6.643.)

(c) A master switch arrangement. (See §§ 6.623 and 6.624.)

(d) A source(s) of electrical energy (see §§ 6.620 through 6.622) where such electrical energy is necessary for operation of the rotorcraft.

(e) Electrical protective devices. (See § 6.625.)

INSTRUMENTS; INSTALLATION

§ 6.610 *General.* The provisions of §§ 6.611 through 6.613 shall apply to the installation of instruments in rotorcraft.

§ 6.611 *Arrangement and visibility of instrument installations.* (a) Flight, navigation, and powerplant instruments for use by each pilot shall be easily visible to him.

(b) On multiengine rotorcraft, identical powerplant instruments for the several engines shall be so located as to prevent any confusion as to the engines to which they relate.

(c) The vibration characteristics of the instrument panel shall be such as not to impair seriously the readability or the accuracy of the instruments or to damage them.

§ 6.612 *Flight and navigational instruments—(a) Air-speed indicating system.* The air-speed indicating system shall be so installed that the air-speed indicator shall indicate true air speed at sea level under standard conditions to within an allowable installation error of not more than plus or minus 3 percent of the calibrated air speed or 5 mph, whichever is greater. The calibration shall be made in flight at all forward speeds of 10 mph or over. The allowable installation error shall not be exceeded at any forward speed of 20 mph and over. (See § 6.732.)

(b) *Static air-vent system.* All instruments provided with static air case connections shall be so vented that the influence of rotorcraft speed, the opening and closing of windows, air-flow variation, moisture, or other foreign matter will not seriously affect their accuracy.

(c) *Magnetic direction indicator.* The magnetic direction indicator shall be so installed that its accuracy shall not be excessively affected by the rotorcraft's

vibration or magnetic fields. After the direction indicator has been compensated, the installation shall be such that the deviation in level flight does not exceed 10° on any heading. A suitable calibration placard shall be provided as specified in § 6.733.

§ 6.613 *Powerplant instruments*—(a) *Instrument lines.* Instrument lines shall comply with the provisions of § 6.425. In addition, instrument lines carrying flammable fluids or gases under pressure shall be provided with restricted orifices or equivalent safety devices at the source of the pressure to prevent the escape of excessive fluid or gas in case of line failure.

(b) *Fuel quantity indicator.* Fuel quantity indicators shall be calibrated to read zero during level flight when the quantity of fuel remaining in the tank is equal to the unusable fuel supply as defined by § 6.421. (See also § 6.736.)

(c) *Fuel flowmeter system.* When a flowmeter system is installed, the metering component shall include a means for by-passing the fuel supply in the event that malfunctioning of the metering component results in a severe restriction to fuel flow.

(d) *Oil quantity indicator.* (1) Means shall be provided to indicate the quantity of oil in each tank when the rotorcraft is on the ground. (See § 6.735.)

(2) If an oil transfer system or a reserve oil supply system is installed, means shall be provided to indicate to the crew during flight the quantity of oil in each tank.

(e) *Cylinder head temperature indicator.* A cylinder head temperature indicator shall be provided for each engine or rotorcraft equipped with cooling shutters. In the case of rotorcraft which do not have cooling shutters, an indicator shall be provided if compliance with the provisions of § 6.451 is demonstrated in a condition other than the most critical cooling flight condition.

(f) *Carburetor air temperature indicating system.* A carburetor air temperature indicating system shall be provided for each engine equipped with a preheater which is capable of providing a heat rise in excess of 60° F.

(g) *Oil temperature indicator.* Means shall be provided to indicate to the appropriate members of the flight crew, during flight, the oil inlet temperature of each engine.

(h) *Coolant temperature indicator.* Means shall be provided to indicate to the appropriate members of the flight crew, during flight, the coolant outlet temperature of each liquid-cooled engine.

ELECTRICAL SYSTEMS AND EQUIPMENT

§ 6.620 *Installation.* (a) Electrical systems and equipment shall be free from hazards in themselves, in their method of operation, and in their effects on other parts of the rotorcraft. They shall be protected from fuel, oil, water, other detrimental substances, and from mechanical damage.

(b) The design of all components of the electrical system shall be appropriate for the intended use, and the components shall be capable of satisfactory operation

over the entire range of environmental conditions encountered in the operation of the rotorcraft.

(c) Electrical sources of power shall have sufficient capacity during all normal flight operating conditions to supply the electrical load requirements without electrical or thermal distress. For emergency operating conditions the capacity of electrical power sources shall be sufficient for all electrical loads necessary to permit a safe landing.

§ 6.621 *Batteries.* A battery or batteries shall be provided consistent with the needs of the electrical system in complying with the requirements of electrical power capacity. The installation shall provide adequate ventilation and drainage for the battery under all operating conditions, and means shall be provided to prevent corrosive battery substance from coming in contact with other parts of the rotorcraft during servicing or in flight.

§ 6.622 *Generator system*—(a) *Generator.* Sources of electrical power (including the battery) shall be designed to function coordinately, and shall also be capable of independent operation. The generator(s) shall be capable of delivering sufficient power to keep the batteries charged, and in addition shall provide for the normal electrical power requirements of the rotorcraft.

(b) *Generator controls.* Generator voltage control equipment shall be capable of regulating the generator output within rated limits.

(c) *Reverse current cut-off.* A generator reverse current cut-off shall disconnect the generator from the battery and from other generators when the generator is developing a voltage of such value that current sufficient to cause malfunctioning can flow into the generator.

§ 6.623 *Master switch.* A master switch arrangement shall be provided which will disconnect all sources of electrical power from the main distribution system at a point adjacent to the power sources.

§ 6.624 *Master switch installation.* The master switch or its controls shall be so installed that it is easily discernible and accessible to a member of the crew in flight.

§ 6.625 *Protective devices.* Protective devices (fuses or circuit breakers) shall be installed in the circuits to all electrical equipment, except that such items need not be installed in the main circuits of starter motors or in other circuits where no hazard is presented by their omission. If fuses are used, one spare of each rating or 50 percent spare fuses of each rating, whichever is the greater, shall be provided.

§ 6.626 *Protective devices installation.* Protective devices in circuits essential to safety in flight shall be conveniently located and properly identified to facilitate replacement of fuses or resetting of circuit breakers in flight.

§ 6.627 *Electric cables.* The electric cables used shall be in accordance with approved standards for aircraft electric cable of a slow-burning type. They

shall have current-carrying capacity sufficient to deliver the necessary power to the items of equipment to which they are connected.

§ 6.628 *Switches.* Switches shall be capable of carrying their rated current. They shall be accessible to the crew and shall be labeled as to operation and the circuit controlled.

LIGHTS

§ 6.630 *Instrument lights.* (a) Instrument lights shall provide sufficient illumination to make all instruments, switches, etc., easily readable.

(b) Instrument lights shall be so installed that their direct rays are shielded from the pilot's eyes and so that no objectionable reflections are visible to him.

§ 6.631 *Landing lights.* (a) When landing or hovering lights are required, they shall be of an approved type.

(b) Landing lights shall be installed so that there is no objectionable glare visible to the pilot and so that the pilot is not adversely affected by halation.

(c) Landing lights shall be installed in a location where they provide the necessary illumination for night operation including hovering and landing.

(d) A switch for each light shall be provided, except that where multiple lights are installed at one location a single switch for the multiple lights shall be acceptable.

§ 6.632 *Position light system installation*—(a) *General.* The provisions of §§ 6.632 through 6.635 shall be applicable to the position light system as a whole, and shall be complied with if a single circuit type system is installed. The single circuit system shall include the items specified in paragraphs (b) through (f) of this section.

NOTE: Requirements for dual circuit position light systems are contained in Part 4b of this subchapter.

(b) *Forward position lights.* Forward position lights shall consist of a red and a green light spaced laterally as far apart as practicable and installed forward on the rotorcraft in such a location that, with the rotorcraft in normal flying position, the red light is displayed on the left side and the green light is displayed on the right side. The individual lights shall be of an approved type.

(c) *Rear position light.* The rear position light shall be a white light mounted as far aft as practicable. The light shall be of an approved type.

(d) *Circuit.* The two forward position lights and the rear position light shall constitute a single circuit.

(e) *Flasher.* If employed, an approved position light flasher for a single circuit system shall be installed. The flasher shall be such that the system is energized automatically at a rate of not less than 60 nor more than 120 flashes per minute with an on-off ratio between 2.5:1 and 1:1. Unless the flasher is of a fail-safe type, means shall be provided in the system to indicate to the pilot when there is a failure of the flasher and a further means shall be provided for turning the lights on steady in the event of such failure.

(f) *Light covers and color filters.* Light covers or color filters used shall be of noncombustible material and shall be constructed so that they will not change color or shape or suffer any appreciable loss of light transmission during normal use.

§ 6.633 *Position light system dihedral angles.* The forward and rear position lights as installed on the rotorcraft shall show unbroken light within dihedral angles specified in paragraphs (a) through (c) of this section.

(a) Dihedral angle L (left) shall be considered formed by two intersecting vertical planes, one parallel to the longitudinal axis of the rotorcraft and the other at 110° to the left of the first, when looking forward along the longitudinal axis.

(b) Dihedral angle R (right) shall be considered formed by two intersecting vertical planes, one parallel to the longitudinal axis of the rotorcraft and the other at 110° to the right of the first, when looking forward along the longitudinal axis.

(c) Dihedral angle A (aft) shall be considered formed by two intersecting vertical planes making angles of 70° to the right and 70° to the left, respectively, looking aft along the longitudinal axis, to a vertical plane passing through the longitudinal axis.

§ 6.634 *Position light distribution and intensities—(a) General.* The intensities prescribed in this section are those to be provided by new equipment with all light covers and color filters in place. Intensities shall be determined with the light source operating at a steady value equal to the average luminous output of the light source at the normal operating voltage of the rotorcraft. The light distribution and intensities of position lights shall comply with the provisions of paragraph (b) of this section.

(b) *Forward and rear position lights.* The light distribution and intensities of forward and rear position lights shall be expressed in terms of minimum intensities in the horizontal plane, minimum intensities in any vertical plane, and maximum intensities in overlapping beams, within dihedral angles L, R, and A, and shall comply with the provisions of subparagraphs (1) through (3) of this paragraph.

(1) *Intensities in horizontal plane.* The intensities in the horizontal plane shall not be less than the values given in Figure 6-1. (The horizontal plane is the plane containing the longitudinal axis of the rotorcraft and is perpendicular to the plane of symmetry of the rotorcraft.)

(2) *Intensities above and below horizontal.* The intensities in any vertical plane shall not be less than the appropriate value given in Figure 6-2, where I is the minimum intensity prescribed in Figure 6-1 for the corresponding angles in the horizontal plane. (Vertical planes are planes perpendicular to the horizontal plane.)

(3) *Overlaps between adjacent signals.* The intensities in overlaps between adjacent signals shall not exceed the values given in Figure 6-3, except that higher intensities in the overlaps shall be acceptable with the use of main beam in-

tensities substantially greater than the minima specified in Figures 6-1 and 6-2 if the overlap intensities in relation to the main beam intensities are such as not to affect adversely signal clarity.

Dihedral angle (light included)	Angle from right or left of longitudinal axis, measured from dead ahead	Intensity (candles)
L and R (forward red and green).	0° to 10°	40
	10° to 20°	30
	20° to 110°	5
A (rear white).	110° to 180°	20

FIGURE 6-1—MINIMUM INTENSITIES IN THE HORIZONTAL PLANE OF FORWARD AND REAR POSITION LIGHTS

Angle above or below horizontal	Intensity
0°	1.00 I.
0° to 5°	0.90 I.
5° to 10°	0.80 I.
10° to 15°	0.70 I.
15° to 20°	0.50 I.
20° to 30°	0.30 I.
30° to 40°	0.10 I.
40° to 90°	At least 2 candles.

FIGURE 6-2—MINIMUM INTENSITIES IN ANY VERTICAL PLANE OF FORWARD AND REAR POSITION LIGHTS

Overlaps	Maximum intensity	
	Area A (candles)	Area B (candles)
Green in dihedral angle L.	10	1
Red in dihedral angle R.	10	1
Green in dihedral angle A.	5	1
Red in dihedral angle A.	5	1
Rear white in dihedral angle L.	5	1
Rear white in dihedral angle R.	5	1

NOTE: Area A includes all directions in the adjacent dihedral angle which pass through the light source and which intersect the common boundary plane at more than 10 degrees but less than 20 degrees. Area B includes all directions in the adjacent dihedral angle which pass through the light source and which intersect the common boundary plane at more than 20 degrees.

FIGURE 6-3—MAXIMUM INTENSITIES IN OVERLAPPING BEAMS OF FORWARD AND REAR POSITION LIGHTS

§ 6.635 *Color specifications.* The colors of the position lights shall have the International Commission on Illumination chromaticity coordinates as set forth in paragraphs (a) through (c) of this section.

(a) *Aviation red.*

"y" is not greater than 0.335,
"z" is not greater than 0.002;

(b) *Aviation green.*

"x" is not greater than 0.440—0.320y,
"x" is not greater than y—0.170,
"y" is not less than 0.390—0.170x;

(c) *Aviation white.*

"x" is not less than 0.350,
"x" is not greater than 0.540,
"y—y₀" is not numerically greater than 0.01, y₀ being the y coordinate of the Planckian radiator for which x₀=x.

§ 6.636 *Riding light.* (a) When a riding (anchor) light is required for a rotorcraft operated from water, it shall be capable of showing a white light for at least 2 miles at night under clear atmospheric conditions.

(b) Riding lights shall be installed so that they will show a maximum practicable unbroken light when the rotor-

craft is moored or drifting on the water. Externally hung lights shall be permitted.

SAFETY EQUIPMENT

§ 6.640 *General.* Required safety equipment which the crew is expected to operate at a time of emergency, such as flares and automatic life-raft releases, shall be readily accessible. (See also § 6.738 (e).)

§ 6.641 *Flares.* When parachute flares are installed, they shall be of an approved type, and their installation shall be in accordance with § 6.642.

§ 6.642 *Flare installation.* (a) Parachute flares shall be releasable from the pilot compartment and installed to minimize the danger of accidental discharge.

(b) It shall be demonstrated in flight that the flare installation is such that ejection can be accomplished without hazard to the rotorcraft and its occupants.

(c) If recoil loads are involved in the ejection of the flares, the structure of the rotorcraft shall be designed to withstand such loads.

§ 6.643 *Safety belts.* Rotorcraft manufactured on or after the effective date of this part (January 15, 1951) shall be equipped with safety belts of an approved type. (See § 6.18.) In no case shall the rated strength of the safety belt be less than that corresponding with the ultimate load factors specified, taking due account of the dimensional characteristics of the safety belt installation for the specific seat or berth arrangement. Safety belts shall be attached so that no part of the anchorage will fail at a load lower than that corresponding with the ultimate load factors specified. (See § 6.260.)

§ 6.644 *Emergency flotation and signaling equipment.* When emergency flotation and signaling equipment is required by the operating rules of the regulations in this subchapter such equipment shall comply with the provisions of paragraphs (a) through (c) of this section.

(a) Rafts and life preservers shall be of an approved type and shall be so installed as to be readily available to the crew and passengers.

(b) Rafts released automatically or released by the pilot shall be attached to the rotorcraft by means of lines to keep them alongside the rotorcraft. The strength of the lines shall be such that they will break before submerging the empty raft.

(c) Signaling devices shall be free from hazard in their operation and shall be installed in an accessible location.

MISCELLANEOUS EQUIPMENT

§ 6.650 *Hydraulic systems—(a) Design.* Hydraulic systems and elements shall withstand, without exceeding the yield point, all structural loads which are expected to be imposed in addition to the hydraulic loads.

(b) *Tests.* Hydraulic systems shall be substantiated by proof pressure tests. When proof tested, no part of a hydraulic system shall fail, malfunction, or experience a permanent set. The proof load of any system shall be 1.5 times the

maximum operating pressure of that system.

(c) *Accumulators.* Hydraulic accumulators or pressurized reservoirs shall not be installed on the engine side of the fire wall, except when they form an integral part of the engine.

SUBPART G—OPERATING LIMITATIONS AND INFORMATION

GENERAL

§ 6.700 *Scope.* (a) The operating limitations in §§ 6.710 through 6.718 shall be established as prescribed in this part.

(b) The operating limitations, together with any other information concerning the rotorcraft found necessary for safety during operation, shall be included in the Rotorcraft Flight Manual (§ 6.740), shall be expressed as markings and placards (§ 6.730), and shall be made available by such other means as will convey the information to the crew members.

OPERATING LIMITATIONS

§ 6.710 *Air-speed limitations; general.* When air-speed limitations are a function of weight, weight distribution, altitude, rotor speed, power, or other factors, the values corresponding with all critical combinations of these values shall be established.

§ 6.711 *Never-exceed speed V_{NE} .* (a) The never-exceed speed shall be established. It shall not be less than the best rate-of-climb speed with all engines at maximum continuous power, nor greater than either of the following:

(1) 0.9V established in accordance with § 6.204, or

(2) 0.9 times the maximum speed demonstrated in accordance with § 6.140.

(b) It shall be permissible to vary the never-exceed speed with altitude and rotor rpm, provided that the ranges of these variables are sufficiently large to allow an operationally practical and safe variation of the never-exceed speeds.

§ 6.712 *Operating speed range.* An operating speed range shall be established for each rotorcraft.

§ 6.713 *Rotor speed.* Rotor rpm limitations shall be established as set forth in paragraphs (a) and (b) of this section. (See also § 6.710.)

(a) *Maximum power off (autorotation).* Not to exceed 95 percent of the maximum design rpm determined under § 6.204 (b) or 95 percent of the maximum rpm demonstrated during the type tests (see § 6.103 (b)), whichever is less.

(b) *Minimum—(1) Power off.* Not less than 105 percent of the higher of the following:

(i) The minimum demonstrated during the type test (see § 6.103 (b)), or

(ii) The minimum determined by design substantiation.

(2) *Power on.* Not less than the higher of the following:

(i) The minimum demonstrated during the type tests (see § 6.103 (a)), or

(ii) The minimum determined by design substantiation and not higher than a value determined in compliance with § 6.103 (a).

§ 6.714 *Powerplant limitations.* The powerplant limitations set forth in para-

graphs (a) through (c) of this section shall be established for the rotorcraft. They shall not exceed the corresponding limits established as a part of the type certification of the engine installed on the rotorcraft.

(a) *Take-off operation.* The take-off operation shall be limited by:

(1) The maximum rotational speed, which shall not be greater than the maximum value determined by the rotor design, nor greater than the maximum value demonstrated during type tests.

(2) The maximum permissible manifold pressure.

(3) The time limit upon the use of the corresponding power.

(4) The maximum allowable cylinder head, coolant outlet, or oil temperatures, if applicable when the time limit of subparagraph (3) of this paragraph exceeds two minutes.

(b) *Continuous operation.* The continuous operation shall be limited by:

(1) The maximum rotational speed, which shall not be greater than the maximum value determined by the rotor design, nor greater than the maximum value demonstrated during type tests.

(2) The minimum rotational speed demonstrated in compliance with the rotor speed requirements as prescribed in § 6.713 (b) (2). (See §§ 6.103, 6.710, and 6.711.)

(c) *Fuel octane rating.* The minimum octane rating of fuel required for satisfactory operation of the powerplant within the limitations prescribed in paragraphs (a) and (b) of this section.

§ 6.715 *Limiting height-speed envelope.* If a range of heights exists at any speed, including zero, within which it is not possible to make a safe landing following power failure, the range of heights and its variation with forward speed shall be established together with any other pertinent information, such as type of landing surface. Such an envelope shall be established in full autorotation for single-engine helicopters and with one engine inoperative for multi-engine helicopters provided that engine isolation design features are incorporated to assure continued operation of the remaining engines. (See § 6.741 (f).)

§ 6.716 *Rotorcraft weight and center of gravity limitations.* The rotorcraft weight and center of gravity limitations to be established are those required to be determined by §§ 6.101 and 6.102.

§ 6.717 *Minimum flight crew.* The minimum flight crew shall be established by the Administrator as that number of persons which he finds necessary for safety in the operations authorized under § 6.718. This finding shall be based upon the workload imposed upon individual crew members with due consideration given to the accessibility and the ease of operation of all necessary controls by the appropriate crew members.

§ 6.718 *Types of operation.* The type of operation to which a rotorcraft is limited shall be established on the basis of flight characteristics and the equipment installed. (See the operating parts of this subchapter.)

§ 6.719 *Maintenance manual.* The applicant shall furnish with each rotor-

craft a maintenance manual to contain information which he considers essential for the proper maintenance of the rotorcraft. The maintenance manual shall include recommended limits on service life or retirement periods for major components of the rotorcraft. Such components shall be identified by serial number or by other equivalent means.

MARKINGS AND PLACARDS

§ 6.730 *General.* (a) The markings and placards specified in §§ 6.731 through 6.738 are required for all rotorcraft.

(b) Markings and placards shall be displayed in conspicuous places and shall be such that they cannot be easily erased, disfigured, or obscured.

(c) Additional information, placards, and instrument markings having a direct and important bearing on safe operation of the rotorcraft shall be required when unusual design, operating, or handling characteristics so warrant.

§ 6.731 *Instrument markings; general.* (a) When markings are placed on the cover glass of the instrument, provision shall be made to maintain the correct alignment of the glass cover with the face of the dial.

(b) All arcs and lines shall be of sufficient width and so located that they are clearly visible to the pilot.

§ 6.732 *Air-speed indicator.* Instrument indications shall be in terms of indicated air speed. The markings set forth in paragraphs (a) through (c) of this section shall be used to indicate to the pilot the maximum and minimum permissible speeds and the normal precautionary operating ranges. (See §§ 6.612 (a), 6.710, 6.711, 6.712, 6.713, and 6.715.)

(a) A red radial line shall be used to indicate the limit beyond which operation is dangerous.

(b) A yellow arc shall be used to indicate the precautionary operating range.

(c) A green arc shall be used to indicate the safe operating range.

§ 6.733 *Magnetic direction indicator.* A placard shall be installed on or in close proximity to the magnetic direction indicator which shall comply with the requirements of paragraphs (a) through (c) of this section. (See § 6.612 (c).)

(a) The placard shall contain the calibration of the instrument in a level flight attitude with engine(s) operating.

(b) The placard shall state whether the calibration was made with radio receiver(s) on or off.

(c) The calibration readings shall be in terms of magnetic headings in not greater than 45° increments.

§ 6.734 *Powerplant instruments; general.* All required powerplant instruments shall be marked in accordance with paragraphs (a) through (c) of this section. (See § 6.613.)

(a) The maximum and the minimum (if applicable) safe operation limits shall be marked with red radial lines.

(b) The normal operating ranges shall be marked with a green arc not extending beyond the maximum and minimum safe operational limits.

(c) The take-off and precautionary ranges shall be marked with a yellow arc.

§ 6.735 *Oil quantity indicator.* Oil quantity indicators shall be marked in sufficient increments to indicate readily and accurately the quantity of oil. (See § 6.613 (d).)

§ 6.736 *Fuel quantity indicator.* When the unusable fuel supply for any tank exceeds 1 gallon or 5 percent of the tank capacity, whichever is greater, a red arc shall be marked on the indicator extending from the calibrated zero reading to the lowest reading obtainable in the level flight attitude. (See §§ 6.421 and 6.613 (b).) A notation in the Rotorcraft Flight Manual shall be made to indicate that the fuel remaining in the tank when the quantity indicator reaches zero is not usable in flight. (See § 6.741 (g).)

§ 6.737 *Control markings—(a) General.* All cockpit controls including those referred to in paragraphs (b) and (c) of this section shall be plainly marked as to their function and method of operation. (See § 6.353.)

(b) *Powerplant fuel controls.* The powerplant fuel controls shall be marked in accordance with subparagraphs (1) through (4) of this paragraph.

(1) Controls for fuel tank selector valves shall be marked to indicate the position corresponding with each tank with all existing cross-feed positions.

(2) When more than one fuel tank is provided, and if safe operation depends upon the use of tanks in a specific sequence, the fuel tank selector controls shall be marked adjacent to or on the control to indicate to the flight personnel the order in which the tanks must be used.

(3) On multiengine rotorcraft, controls for engine valves shall be marked to indicate the position corresponding with each engine.

(4) The capacity of each tank shall be indicated adjacent to or on the fuel tank selector control.

(c) *Accessory and auxiliary controls.* Accessory and auxiliary controls shall be marked in accordance with subparagraphs (1) and (2) of this paragraph.

(1) Where visual indicators are essential to the operation of the rotorcraft (such as a rotor pitch or retractable landing gear indicator), they shall be marked in such a manner that the crew members at all times can determine the position of the unit.

(2) Emergency controls shall be colored red and shall be marked to indicate their method of operation.

§ 6.738 *Miscellaneous markings and placards—(a) Baggage compartments and ballast location.* Each baggage and cargo compartment as well as the ballast location shall bear a placard stating the maximum allowable weight of contents and, if applicable, any other limitation on contents found necessary due to loading requirements. When the maximum permissible weight to be carried in a seat is less than 170 pounds (see § 6.101 (b) (4)), a placard shall be permanently attached to the seat structure stating the maximum allowable weight of the occupant to be carried.

(b) *Fuel and oil filler openings.* The information required by subparagraphs (1) and (2) of this para-

graph shall be marked on or adjacent to the appropriate filler cover.

(1) The word "fuel", the minimum permissible fuel octane number for the engines installed, and the usable fuel tank capacity. (See § 6.423 (c).)

(2) The word "oil" and the oil tank capacity. (See § 6.441 (e).)

(c) *Emergency exit placards.* Emergency exit placards and operating controls shall be colored red. A placard shall be located adjacent to the controls which clearly indicates the location of the exit and the method of operation. (See § 6.357.)

(d) *Operating limitation placard.* A placard shall be provided in clear view of the pilot stating: "This (helicopter, gyrodyne, etc.) must be operated in compliance with the operating limitations specified in the CAA approved Rotorcraft Flight Manual."

(e) *Safety equipment.* (1) Safety equipment controls which the crew is expected to operate in time of emergency, such as flares, automatic life raft releases, etc., shall be plainly marked as to their method of operation.

(2) When fire extinguishers and signaling and other life-saving equipment are carried in lockers, compartments, etc., these locations shall be marked accordingly.

ROTORCRAFT FLIGHT MANUAL

§ 6.740 *General.* (a) A Rotorcraft Flight Manual shall be furnished with each rotorcraft, except that a Rotorcraft Flight Manual is not required for helicopters certificated under this part; instead, the information prescribed in this part for inclusion in the Rotorcraft Flight Manual shall be made available to the operator by the manufacturer in the form of clearly stated placards, markings, or manuals. If all of the operating limitations are not included in the form of placards and markings on the helicopter then the portion of the manual supplied by the manufacturer containing the operating limitations prescribed in § 6.741 shall be approved and furnished with each helicopter.

(b) The portions of the manual listed in §§ 6.741 through 6.744 as are appropriate to the rotorcraft shall be verified and approved and shall be segregated, identified, and clearly distinguished from portions not so approved.

(c) Additional items of information having a direct and important bearing on safe operation shall be required when unusual design, operating, or handling characteristics so warrant.

§ 6.741 *Operating limitations.* The operating limitations set forth in paragraphs (a) through (g) of this section shall be furnished with each rotorcraft.

(a) *Air-speed and rotor limitations.* Sufficient information shall include the information necessary for the marking of the limitations on or adjacent to the indicators as required. (See § 6.732.) In addition, the significance of the limitations and of the color coding used shall be explained.

(b) *Powerplant limitations.* Information shall be included to outline and to explain all powerplant limitations (see § 6.714) and to permit marking the in-

struments as required by §§ 6.734 through 6.736.

(c) *Weight and loading distribution.* The rotorcraft weights and center of gravity limits required by §§ 6.101 and 6.102 shall be included, together with the items of equipment on which the empty weight is based. Where the variety of possible loading conditions warrants, instructions shall be included to facilitate observance of the limitations.

(d) *Flight crew.* When a flight crew of more than one is required, the number and functions of the minimum flight crew determined in accordance with § 6.717 shall be described.

(e) *Type of operation.* The type(s) of operation(s) shall be listed for which the rotorcraft and its equipment installations have been approved. (See § 6.718.)

(f) *Limiting heights.* Sufficient information shall be included to outline the limiting heights and corresponding speeds for safe landing after power failure. (See § 6.715.)

(g) *Unusable fuel.* If the unusable fuel supply in any tank exceeds one gallon or 5 percent of the tank capacity, whichever is the greater, warning shall be provided to indicate to the flight personnel that the fuel remaining in the tank when the quantity indicator reads zero cannot be used safely in flight. (See § 6.421.)

§ 6.742 *Operating procedures.* The section of the manual devoted to operating procedures shall contain information concerning normal and emergency procedures and other pertinent information, including take-off and landing procedures and their appropriate air speeds, peculiar to the rotorcraft's operating characteristics which are necessary for safe operation.

§ 6.743 *Performance information.* Information relative to the items of performance set forth in paragraphs (a) and (b) of this section shall be included.

(a) The steady rates of climb and hovering ceilings together with the corresponding air speeds and other pertinent information, including the calculated effect of altitude and temperature. (See §§ 6.112 and 6.113.)

(b) Maximum wind allowable for safe operation near the ground. (See § 6.121 (d).)

§ 6.744 *Marking and placard information.* (See § 6.730.)

ROTORCRAFT IDENTIFICATION DATA

§ 6.750 *Identification plate.* A fireproof identification plate shall be securely attached to the structure in an accessible location where it will not likely be defaced during normal service. The identification plate shall not be placed in a location where it might be expected to be destroyed or lost in the event of an accident. The identification plate shall contain the identification data required by § 1.50 of this subchapter.

§ 6.751 *Identification marks.* The nationality and registration marks shall be permanently affixed in accordance with § 1.100 of this subchapter.

[F. R. Doc. 56-10455; Filed, Dec. 21, 1956; 8:51 a. m.]

Chapter II—Civil Aeronautics Administration, Department of Commerce

[Amdt. 3]

PART 620—SECURITY CONTROL OF AIR TRAFFIC

ADDITIONAL EXEMPTIONS AND REVISION OF NORTHERN ADIZ

The Department of Defense has advised the Administrator that compliance with Part 620 for certain international flights proceeding outbound from the United States, or domestic flights proceeding outbound from the Eastern or Western Defense Areas, will not be necessary for the security control of air traffic on or after January 1, 1957. In addition, the Administrator has also been advised that the portion of the Northern ADIZ west of 121°00' W., may be eliminated on the same date.

Part 620 is hereby amended to exempt flights outbound through an ADIZ, and to delete the appropriate portion of the Northern ADIZ. A minor typographical error in § 620.10 is also being corrected at this time.

Since a military function of the United States is involved and the amendment constitutes a relaxation of the present requirements, compliance with the notices, procedures and effective date provisions of section 4 of the Administrative Procedure Act is not required.

1. Amend § 620.10 by changing the word "and" to "an".

2. Amend subdivisions (i) through (iv) of § 620.13 (c) (2) to read as follows:

(c) Areas or routes excepted. * * *

(2) *Continental United States.* (i) A flight originating within the Eastern or Western Defense Area which maintains an outbound track into or through a contiguous ADIZ.

(ii) A flight originating within the Eastern, Western or Presque Isle ADIZ which maintains an outbound track which will come no closer to the contiguous Defense Area than the point of origin.

(iii) A flight originating within the Northern ADIZ which maintains an outbound track toward or across the United States-Canadian Border.

(iv) A flight originating within or overflying the Central Open Area which maintains an outbound track into or through the Northern ADIZ or Southern Border ADIZ without penetrating the Eastern ADIZ or Western ADIZ toward the associated Defense Area.

3. Amend § 620.21 (a) to read as follows:

§ 620.21 *Domestic ADIZ's*—(a) *Northern (Domestic) ADIZ.* The area bounded by a line from the United States-Canadian Border at 121°00' W., eastward along the U. S.-Canadian Border to 47°10' N., 85°31' W.; 46°51' N., 94°00' W.; 47°10' N., 96°17' W.; 48°00' N., 99°00' W.; to 48°00' N., 121°00' W.; to U. S.-Canadian Border at 121°00' W. (point of beginning).

(Sec. 1203, 64 Stat. 825; 49 U. S. C. 703. Interpret or apply secs. 1201-1204, 64 Stat. 825; 49 U. S. C. 701-704)

This amendment shall become effective January 1, 1957.

[SEAL]

JAMES T. PYLE,
Acting Administrator
of Civil Aeronautics.

[F. R. Doc. 56-10402; Filed, Dec. 21, 1956; 8:45 a. m.]

TITLE 28—JUDICIAL ADMINISTRATION

Chapter I—Department of Justice

[Order 138-56]

PART 5—ADMINISTRATION OF THE FOREIGN AGENTS REGISTRATION ACT OF 1938, AS AMENDED

REVISION OF PART

Reference is made to the notice of proposed rule making which was published in the FEDERAL REGISTER of November 21, 1956 (21 F. R. 9059), pursuant to section 4 of the Administrative Procedure Act (60 Stat. 238; 5 U. S. C. 1003) and in which there were set out in full the terms of proposed revisions to Part 5, Chapter I, Title 28, of the Code of Federal Regulations, relating to the issuance of rules governing the administration of the Foreign Agents Registration Act of 1938, as amended. No representations were received concerning the proposed amendments. The amendatory regulations, as set out below, are hereby adopted. The adopted regulations are the same as set out in the notice.

Part 5 is amended to read as follows:

- Sec.
- 5.1 Administration of act assigned to Registration Section.
 - 5.2 Inquiries concerning application of act.
 - 5.3 Act and rules and regulations to be considered together.
 - 5.4 Computation of time.
 - 5.5 Effect of compliance with act; other laws.
 - 5.6 Persons outside the United States.
 - 5.100 Definitions.
 - 5.200 Filing of registration statement.
 - 5.201 Time within which registration statement must be filed.
 - 5.202 Separate registration by each person required to register; short-form registration.
 - 5.203 Original registration forms.
 - 5.204 Exhibits.
 - 5.205 Information relating to collection of funds.
 - 5.206 Information relating to transmission of funds.
 - 5.207 Six month supplements under section 2 (b) of act.
 - 5.208 Language and wording of registration statements.
 - 5.209 Execution under oath; form of document.
 - 5.210 Incorporation by reference; inserts.
 - 5.250 Amendments.
 - 5.260 Termination of registration.
 - 5.261 Activities which become exempt subsequent to registration.
 - 5.300 Burden of establishing availability of exemptions.
 - 5.301 Exemption under section 3 (a) of the act.
 - 5.302 Exemptions under sections 3 (b) and (c) of the act.
 - 5.303 Exemptions under sections 3 (d) and (e) of the act.

- Sec.
- 5.400 Filing of political propaganda.
 - 5.401 Dissemination report.
 - 5.402 Labeling political propaganda.
 - 5.403 Political propaganda transmitted by person other than agent of a foreign principal.
 - 5.500 Maintenance of books and records.
 - 5.501 Inspection of books and records.
 - 5.600 Public examination of records.
 - 5.601 Sale of copies of records.

AUTHORITY: §§ 5.1 to 5.601 issued under sec. 2, 52 Stat. 632, as amended; 22 U. S. C. 612.

NOTE: In §§ 5.1 to 5.601 the numbers to the right of the decimal point correspond to the rule numbers in the Attorney General's Order No. 138 of December 13, 1956.

§ 5.1 *Administration of act assigned to Registration Section.* The administration of the act is assigned to the Registration Section of the Internal Security Division, Department of Justice, Washington 25, D. C. Copies of the act, the rules and regulations, and forms may be obtained upon request, without charge. [Rule 1]

§ 5.2 *Inquiries concerning application of act.* Inquiries concerning the application of the act shall be accompanied by a detailed statement of all facts necessary for a determination of the question submitted; including the identity of the agent, the nature of his activities on behalf of each foreign principal, any activities on his own behalf, and on behalf of any other person, by reason of which registration may be required, the identity of each foreign principal, and an outline of any agreement or agreements under which the agent is acting. [Rule 2]

§ 5.3 *Act and rules and regulations to be considered together.* In determining any question concerning the application of the act to any person, the rules and regulations in this part shall be considered together with the provisions of the act. The rules and regulations in this part shall not be construed to limit the act or to define its full scope or application. [Rule 3]

§ 5.4 *Computation of time.* Sundays and holidays shall be counted in computing any period of time provided for in the act or in the rules and regulations in this part. [Rule 4]

§ 5.5 *Effect of compliance with act; other laws.* (a) Compliance with the requirements of the act shall not remove the necessity of complying with any other Federal or State law.

(b) Compliance with any other law shall not remove the necessity of fulfilling the requirements of this act. [Rule 5]

§ 5.6 *Persons outside the United States.* Any person not within the United States who uses the United States mails, or any means or instrumentality of interstate or foreign commerce, within the United States to circulate or disseminate political propaganda to addressees who have not ordered, subscribed to, or otherwise solicited such material shall be regarded as acting within the United

States and as subject to sections 2 and 4 of the act. [Rule 6]

§ 5.100 *Definitions.* (a) As used in this part, unless the context otherwise requires:

(1) The term "act" means the Foreign Agents Registration Act of 1938, as amended (22 U. S. C. 611-621).

(2) The term "Attorney General" means the Attorney General of the United States.

(3) The term "Secretary of State" means the Secretary of State of the United States.

(4) The term "Registration Section" means the Registration Section of the Internal Security Division, Department of Justice, Washington, D. C.

(5) The term "rules and regulations" refers to all rules, regulations, registration forms, and instructions on forms made and prescribed by the Attorney General pursuant to the act.

(6) The term "registrant" means the person by whom a registration statement is filed pursuant to the provisions of the act.

(7) The term "original registration statement" means the statement required to be filed with the Attorney General under section 2 (a) of the act.

(8) The term "supplemental statement" means the statement required to be filed with the Attorney General under section 2 (b) of the act at intervals of six months following the date of filing of the original registration statement.

(9) The term "final statement" means the statement required to be filed with the Attorney General following the termination of the registrant's obligation to register.

(10) The term "political propaganda" includes only political propaganda as defined in section 1 (j) of the act, which is in the form of prints, speeches, broadcasts, telecasts, or in any other form reasonably adapted to being, and which there is reason to believe will be, or is intended to be, circulated or disseminated among two or more persons.

(11) The term "political activity" includes, but shall not be limited to, any of the following:

(i) Circulating or disseminating any political propaganda within the meaning of subparagraph (10) of this paragraph.

(ii) Furnishing information or advice to, or in any way representing, a foreign principal with respect to any matter pertaining to political or public interests, policies, or relations of any foreign government or foreign political party, or the political interests of such foreign principal, or engaging in other activities in furtherance of such political or public interests, policies, or relations.

(iii) Directly or indirectly, furnishing, publishing, or disseminating, whether or not pursuant to contractual relationship or authorization, any matter described in section 1 (h) or 1 (i) of the act, which is reasonably adapted to being, and which the person so furnishing, publishing, or disseminating, has reason to believe will be, or intends to be, used in furtherance

of the interests of any government of a foreign country, or any foreign political party, or as a basis for, or in the dissemination or circulation of, political propaganda.

(iv) Engaging on behalf of, or in the interests of, a foreign government or foreign political party, in activities or duties as, or performing the functions of, a security or an intelligence officer of a foreign government or foreign political party.

(v) Engaging in any military activity on behalf of, or in the interests of, any foreign government or foreign political party.

(vi) Engaging in any activity to influence the enactment or repeal of any legislation affecting the political or public interests, policies, or relations of a foreign government, a foreign political party, or a foreign principal, or affecting the foreign policies or relations of the United States.

(vii) Engaging in any activity devoted, in whole or in part, to the establishment, administration, control, or acquisition of administration or control, of a government of a foreign country or a subdivision thereof, or the furtherance or influencing of the political or public interests, policies, or relations of a government of a foreign country or a subdivision thereof.

(viii) Directly or indirectly, reporting or transmitting to any foreign principal any information the publication, dissemination, or transmission of which is forbidden or restricted in the interests of the national defense by the regulations or codes of practice which may be in effect from time to time by an agency of the Government of the United States.

(b) As used in sections 1 (b) (2), 2 (a) (2), and 2 (a) (3) of the act, the terms "control" and "controlled" include the possession or the exercise of the power, directly or indirectly, to determine the policies or the conduct of a person, whether through the ownership of voting securities or by contract or otherwise.

(c) A person shall be considered an officer or member of the active or reserve military, naval, or other armed forces of a foreign government or foreign political party within the meaning of section 1 (c) (4) of the act if:

(1) He has received a commission as such from any foreign government or foreign political party, and has not in good faith resigned such commission and in good faith renounced his allegiance to such foreign country or foreign political party;

(2) He has received military training in, or rendered service to, any such military, naval, or other armed forces and by reason thereof, or for any other reason, is considered by law or regulations governing such forces to be an officer or member, and has not in good faith renounced his allegiance to such foreign country or foreign political party. No person shall be regarded as having in good faith resigned any such commission, or in good faith renounced such allegiance, if since having last so resigned or renounced he has, directly or indi-

rectly, affiliated himself with such armed forces, or has, directly or indirectly, recognized an obligation to serve in such armed forces, or has engaged in any political activity as defined in paragraph (a) (11) of this section on behalf of, or in the interest of, any foreign government or political party.

(d) A person shall be considered an officer or employee of a foreign government or foreign political party within the meaning of section 1 (c) (4) of the act, whether or not he receives any form of remuneration or reimbursement, if he holds any office or employment in such a government or political party, and has not in good faith resigned such position, or in good faith terminated the performance of such duties. No person shall be regarded as having in good faith resigned such position, or in good faith terminated such duties, if since last having purportedly resigned such position, or purportedly terminated such duties, he has, directly or indirectly, performed any of the functions of, or acted as, an officer or employee of such foreign government or foreign political party. [Rule 100]

§ 5.200 *Filing of registration statement.* Registration statements shall be filed in duplicate with the Registration Section, Department of Justice, Washington 25, D. C. Filing may be done in person or by mail, and shall be deemed to have taken place upon the receipt thereof by the Registration Section. [Rule 200]

§ 5.201 *Time within which registration statement must be filed.* (a) Except as hereinafter provided, every person who becomes subject to the registration provisions of the act shall file an original registration statement within ten days after the day on which the obligation to register arises.

(b) Upon the filing of an application in writing setting forth that a registration statement cannot be filed within the times set out in paragraph (a) of this section, or that the requirements of that paragraph would impose undue hardship, the Chief, Registration Section, may extend the time within which a registration statement shall be filed for such period as will reasonably permit compliance with the registration requirements of the act and this part. Applications filed pursuant to this paragraph shall set forth the reasons why the filing of a registration statement within the time specified cannot be complied with or why it would create an undue hardship. [Rule 201]

§ 5.202 *Separate registration by each person required to register; short-form registration.* (a) Except as hereinafter provided, the filing of a registration statement by a corporation, partnership, association or other combination of individuals, shall not remove the necessity of filing a registration statement by individual members, employees, associates, and affiliates of such registrant who are required to register under the act.

(b) Unless otherwise determined by the Chief, Registration Section, officers, directors, partners, associates, and em-

ployees of a corporation, partnership, association, or other combination of individuals, which has filed a registration statement under the act, may discharge their obligation to file a separate registration statement by filing a short-form registration statement on the form prescribed therefor.

(c) Unless otherwise determined by the Chief, Registration Section, all persons who render any services or assistance to the registrant in other than a clerical or secretarial capacity, with or without compensation, for or in the interests of the registrant's foreign principal shall file a short-form registration statement.

(d) Any change affecting the information furnished in a short-form registration statement pursuant to clauses (3), (4), (6), and (9) of section 2 (a) of the act shall be reported to the Chief, Registration Section, within ten days after the occurrence of such change.

(e) Whenever notice of a change in the information furnished in a short-form registration statement is given pursuant to paragraph (d) of this section, the Chief, Registration Section, may require the filing of a new short-form registration statement to reflect such change. [Rule 202]

§ 5.203 Original registration forms. Every person required to register shall file a registration statement in duplicate on Form FA-1, or on Form FA-2, or on the short-form registration statement designated as Form FA-4. Form FA-1 shall be used by agents who are individuals. Form FA-2 shall be used by corporations, partnerships, organizations, associations, or other combinations of individuals. Form FA-4 shall be used by individuals who file a short-form registration statement in support of a statement filed either on Form FA-1 or FA-2. [Rule 203]

§ 5.204 Exhibits. Original registration statements filed on Form FA-1 or FA-2 require the filing of certain exhibits, in duplicate, among which are the following:

(a) Exhibit B, which consists of a copy of the agreement, arrangement, or authorization (or, if not in writing, a written description thereof) pursuant to which the registrant is acting for or receiving funds from each of his foreign principals. No printed form is provided for this exhibit.

(b) Exhibit C, which requires the disclosure of information with respect to foreign principals. A printed form is provided for Exhibit C and copies will be furnished upon request. If an agent represents more than one foreign principal, or performs any political activity as defined in § 5.100 (a) (11) on behalf of persons other than foreign principals, an Exhibit C shall be filed for each such foreign principal or other person for whom registration is required.

(c) Exhibit D, which consists of a copy of the charter, constitution, bylaws, or other instruments of organization in the event the registrant is a non-business organization.

(d) Exhibit E, which consists of a copy of all publications which come within the meaning of the term "political propaganda" as defined in section 1 (j) of the act, and which were prepared or distributed by the registrant or by others for the registrant.

(e) Exhibit F, which consists of a copy of the agreement or arrangement (or, if not in writing, a written description) between the registrant and each business firm or other organization responsible for the preparation of publications distributed by the registrant or by others for the registrant. [Rule 204]

§ 5.205 Information relating to collection of funds. (a) Every registrant who receives or collects within the United States contributions, income, money, or thing of value, for or in the interest of his foreign principal shall file a statement showing the names and addresses of persons so contributing, and the amount of funds or value of the thing contributed by each.

(b) Every registrant receiving contributions, income, money, or thing of value from his foreign principal shall report full details with respect to the form and time of each such payment, and fully identify such foreign principal from whom this payment was received. [Rule 205]

§ 5.206 Information relating to transmission of funds. Every registrant who transmits to his foreign principal contributions, income, money, or thing of value received in the interest of the foreign principal shall report the amount of funds or the value of the thing transmitted and the manner and time of transmission. [Rule 206]

§ 5.207 Six month supplements under section 2 (b) of act. (a) Every registrant other than those who file a short-form registration statement shall file in duplicate a six month supplemental statement to his original registration pursuant to section 2 (b) of the act. Supplements to Form FA-1 shall be filed on Form FA-1-6M. Supplements to Form FA-2 shall be filed on Form FA-2-6M.

(b) A supplemental statement shall be filed notwithstanding the fact that the registrant did not engage in any activity in the interest of his foreign principal during the period covered by the statement, so long as the agency relationship continues during said period. [Rule 207]

§ 5.208 Language and wording of registration statements. (a) All forms, statements, notices, supplements, amendments, and other documents, shall be filed in English whenever possible. If filed in a foreign language, they shall be accompanied by an English translation certified under oath by the translator before a notary public, or other person authorized by law to administer oaths for general purposes, as a true and accurate translation.

(b) All answers to items on the forms shall be so worded as to be complete and intelligible, without the necessity of referring to the instructions accompanying the particular form, or to the rules and regulations in this part.

(c) Except as specifically provided otherwise, if any item on any form is inapplicable or the answer is "None," an express statement to such effect shall be made. [Rule 208]

§ 5.209 Execution under oath; form of document. (a) Every form, statement, notice, supplement, and amendment, and every duplicate thereof, shall be executed under oath in the manner set forth in section 2 (c) of the act.

(b) Every form, statement, notice, supplement, and amendment shall be typewritten whenever practicable, but will be regarded as complying with the act and the rules and regulations in this part if written legibly in ink.

(c) Duplicates of any of the documents designated in paragraphs (a) and (b) of this section shall be of the same size as the original, shall be clear and easily read, and may be made by any of the duplicating processes. [Rule 209]

§ 5.210 Incorporation by reference; inserts. (a) Matter contained in any part of a registration statement may be incorporated by reference as an answer, or partial answer, to any item in the registration statement. In each case of incorporation by reference the matter incorporated shall be clearly identified in the reference. An express statement shall be made to the effect that the specified matter is incorporated in the registration statement at the particular place where the information is required. However, the Chief, Registration Section, may refuse to permit such incorporation in any case in which, in his judgment, such incorporation would render the registration statement incomplete or ambiguous. Each supplemental statement shall be complete in and of itself and answers to items in a supplemental statement may not be made by reference to answers given in a previous statement or supplement.

(b) Inserts or riders shall not be used. If the space provided on any form for the answer to any item is insufficient, reference shall be made in such space to a full insert page or pages on which the item number and the wording of the item shall be restated and the complete answer given. [Rule 210]

§ 5.250 Amendments. (a) An amended statement may be required by the Chief, Registration Section, of any person subject to the registration provisions of the act whose original registration, supplemental, or final statement filed pursuant thereto is deemed to be incomplete, inaccurate, false, or misleading.

(b) Amendments shall conform in all respects to the regulations in this part governing the execution and filing of registration statements.

(c) Amendments shall in every case make appropriate reference by number or otherwise to the items in statements to which they relate.

(d) Amendments shall be deemed to be filed upon their receipt by the Registration Section.

(e) Failure of the Chief, Registration Section, to request any person who has

filed an original registration, supplemental, or final statement to file an amended statement shall not preclude prosecution of such person for a wilfully false statement of a material fact, the wilful omission of a material fact, or the wilful omission of a material fact necessary to make statements therein not misleading, in such original registration, supplemental, or final statement.

(f) Notices pursuant to section 2 (b) of the act of changes in information furnished in an original registration or supplemental statement in accordance with clauses (3), (4), (6), and (9) of section 2 (a) of the act shall be by amendment, and shall be filed with the Registration Section within ten days after such changes occur. [Rule 250]

§ 5.260 *Termination of registration.* (a) Every registrant shall, within thirty days after the termination of the obligation to register, file a final statement with the Registration Section for the final period of the agency relationship not covered by any previous statement.

(b) Registration under the act shall be terminated only upon receipt by the Registration Section of a final statement which is deemed acceptable by the Chief, Registration Section. [Rule 260]

§ 5.261 *Activities which become exempt subsequent to registration.* A registrant whose activities on behalf of a foreign principal, subsequent to the filing of a registration statement, become confined to those for which an exemption under section 3 of the act is available, may file a final statement, notwithstanding the continuance of the agency relationship with a foreign principal. [Rule 261]

§ 5.300 *Burden of establishing availability of exemptions.* In all matters pertaining to exemptions, the burden of establishing the availability of the exemption shall rest upon the person for whose benefit the exemption is claimed. [Rule 300]

§ 5.301 *Exemption under section 3 (a) of the act.* The exemption provided by section 3 (a) of the act shall apply to diplomatic officers duly accredited to the Government of the United States and to consular officers who, after appointment by their governments, have received formal recognition as such from the Secretary of State, whether such recognition is provisional or by exequatur. The exemption is available, however, only while such diplomatic or consular officers are engaged exclusively in activities which are recognized by the Department of State as being within the scope of the functions of such officers. [Rule 301]

§ 5.302 *Exemptions under sections 3 (b) and (c) of the act.* (a) The exemption provided by section 3 (b) of the act shall apply only to officials of foreign governments which are recognized by the United States who have filed a fully executed Notification of Status with a Foreign Government.

(b) The exemption provided by section 3 (c) of the act shall apply only to members of the staff of, and persons em-

ployed by, duly accredited diplomatic or consular officers of foreign governments who are so recognized by the Department of State and who have filed a fully executed Notification of Status with a Foreign Government.

(c) The exemption provided by sections 3 (b) and (c) of the act shall not be regarded as available to any person described in paragraphs (a) and (b) of this section if:

(1) He engages in any activities which are not recognized by the Department of State as being within the scope of his functions;

(2) He, directly or indirectly, circulates or disseminates any political propaganda within the United States, or to any other American Republic;

(3) He acts, or has agreed to act, as a security or an intelligence officer, or acts, or has agreed to act, in a related or similar capacity;

(4) He is employed, directly or indirectly, in furnishing information or advice pertaining to political or public interests, policies, or relations (including information or data with respect to the political, industrial, employment, economic, social, cultural, or other benefits, advantages, facts, or conditions of any foreign country, the government of any foreign country or any foreign political party) to any person other than officials of his government, the Government of the United States, or any other government which shall not be at war with the United States, and which is not aiding, or dominated by, any government at war with the United States or any of her Allies; or

(5) He, directly or indirectly, reports or transmits to any foreign principal any information the publication, dissemination, or transmission of which is forbidden or restricted in the interest of the national defense by laws, regulations or codes of practice which may be in effect from time to time by an agency of the Government of the United States.

(d) In no event shall the exemption provided by section 3 (b) of the act be available to any citizen of the United States. [Rule 302]

§ 5.303 *Exemptions under section 3 (d) and (e) of the act.* (a) Except as provided in paragraph (b) of this section, no person shall be regarded as being engaged, or as having agreed to engage, only

(1) In private, nonpolitical, financial, mercantile, or other activities in furtherance of the bona fide trade or commerce of a foreign principal (as provided in section 3 (d) of the act), or

(2) In the soliciting or collecting of funds and contributions within the United States to be used only for medical aid and assistance, or for food and clothing to relieve human suffering, if such solicitation or collection of funds and contributions is in accordance with and subject to the provisions of the act of November 4, 1939, as amended (54 Stat. 8), and such rules and regulations as may be prescribed thereunder (as provided in section 3 (d) of the act), or

(3) In activities in furtherance of bona fide religious, scholastic, academic,

or scientific pursuits or of the fine arts (as provided in section 3 (e) of the act), if he engages in any political activity as defined in § 5.100 (a) (11) on behalf of a foreign principal, on his own behalf, or on behalf of any other person, or engages in any other nonexempt activity.

(b) Any person who is an agent of a news service, radio news service, photo news service, or press service or organization, organized under the laws of or having its principal place of business in a foreign country, or who is an agent of a newspaper, magazine, periodical or other publication published by a foreign principal, shall be regarded as exempt under the provisions of section 3 (d) of the act with respect to his activities as such agent if, and so long as, his political activity, as defined in § 5.100 (a) (11), is confined to:

(1) Gathering and reporting information which is reasonably adapted to being, and which he intends to be, used by his principal solely for news purposes, and not for the purpose of disseminating political propaganda;

(2) Broadcasting or writing for publication within the United States, concerning which the Registration Section has previously been notified in writing, or the making of extemporaneous oral communications, which broadcasts, writings, or communications are not intended for the purpose of disseminating political propaganda;

However, such agent shall not be regarded as exempt under the provisions of section 3 (d) of the act if:

(i) Any of the activities of the agent are performed for, or directed by, any foreign government or foreign political party;

(ii) The foreign principal is owned or subsidized, in whole or in part, by, or any of its activities are directed by, any foreign government or foreign political party;

(iii) The foreign principal is any such service or association organized under the laws of, or having its principal place of business in, or any such publication printed in, any foreign country with which the United States is at war, or any foreign country allied with, or occupied or dominated by, any such country; or

(iv) The agent engages in any activity set out in § 5.100 (a) (11) (iv) or (viii).

(c) This section shall not be construed as fully defining the several activities which, if engaged in, make the exemption under section 3 (d) of the act unavailable.

(d) As used in this section, the term "trade or commerce" shall include the exchange, transfer, purchase, or sale of commodities, services, or property of any kind. [Rule 303]

§ 5.400 *Filing of political propaganda.* (a) A single copy of each item of political propaganda required to be filed with the Attorney General under section 4 (a) of the act shall be filed with the Registration Section.

(b) Filing may be done in person or by mail, and shall be deemed to have taken place upon receipt of such copy by the Registration Section.

(c) Where an item of political propaganda has been filed pursuant to section 4 (a) of the act, it shall not be necessary, in the event of further dissemination of the same material, to forward additional copies thereof either to the Registration Section or the Library of Congress. [Rule 400]

§ 5.401 *Dissemination report.* (a) There shall be attached to each item of political propaganda required to be filed with the Registration Section a dissemination report setting forth the following:

(1) A concise account of the nature of the propaganda material filed.

(2) The medium by which such material has been transmitted.

(3) All addresses from which such material has been transmitted.

(4) The date or dates on which such material has been transmitted.

(5) The approximate number of copies transmitted.

(6) The states, territories, and other places subject to the jurisdiction of the United States and any other American republics to which such material has been transmitted.

(7) The approximate number of persons to each of whom less than one hundred and more than ten copies were transmitted.

(8) The approximate number of persons to each of whom more than one hundred copies were transmitted.

(9) The approximate number of libraries, educational institutions, press services or associations, newspapers or other publications, and public officials to which such material was transmitted.

(10) The nationality groups to which such material was transmitted.

(11) The names and addresses of all persons who are engaged in publishing printed matter in a language other than English, and to whom such material was transmitted.

(12) If such material is radio or television script, any part of which has been written or edited by, or at the direction of, the agent of a foreign principal, the names of the radio or television stations which made use of this script, the name of the broadcasting or televising system used, if any, and the date or dates when such script was used.

(13) Such additional information with respect to the places, times, and extent of such transmittal, as the Chief, Registration Section, having due regard for the national security and public interest, may require.

(b) Information may not be incorporated in a dissemination report by reference to information submitted in a report previously filed.

(c) Filing of a dissemination report may be done in person or by mail, and shall be deemed to have taken place upon the receipt of the report by the Registration Section.

(d) In the event of subsequent dissemination or circulation of the same item of political propaganda, a dissemination report furnishing information in the detail outlined in paragraph (a) of this section shall be filed with the Registration Section concerning such additional circulation or dissemination. Whenever additional dissemination or

circulation is to be made over a period of time, a dissemination report may be rendered monthly for as long as such dissemination or circulation continues. [Rule 401]

§ 5.402 *Labeling political propaganda.* (a) Except as hereinafter provided, every item of political propaganda required to be filed under section 4 (a) of the act, shall be marked or stamped conspicuously at the beginning of such item with a statement in the language or languages used therein, setting forth the following:

(1) The name and address of the agent of a foreign principal transmitting or causing the material to be transmitted.

(2) That such agent has filed with the Registration Section, Department of Justice, Washington, D. C., a registration statement which is available for public inspection.

(3) That the distribution being made is on behalf of, or in the interest of, a specified foreign principal or principals.

(4) That a copy of the material being distributed has been, or is being, filed with the Registration Section.

(5) That the filing of a registration statement with the Registration Section is not to be regarded as an indication that the United States Government has approved the material being transmitted.

(b) All political propaganda which is televised, radio broadcast, or otherwise orally transmitted by an agent of a foreign principal through an instrumentality of interstate or foreign commerce shall be introduced by a statement which is reasonably adapted to convey to the viewers or listeners thereof the information outlined in subparagraphs (1) through (5) of paragraph (a) of this section.

(c) Every still or motion picture film which carries political propaganda required to be labeled under section 4 (b) of the act shall contain at the beginning of such film a statement which is reasonably adapted to convey to the viewers thereof the information outlined in subparagraphs (1) through (5) of paragraph (a) of this section. [Rule 402]

§ 5.403 *Political propaganda transmitted by person other than agent of a foreign principal.* (a) An agent of a foreign principal who is required to register under the provisions of the act shall be deemed to cause political propaganda to be transmitted in the United States mails or by a means or instrumentality of interstate or foreign commerce, within the meaning of section 4 of the act, if such propaganda is disseminated or caused to be disseminated by such agent, knowing, intending or having reason to believe that it will be, and thereafter it actually is, so transmitted in whole or in part either in the same or in a different form by any person.

(b) Whenever political propaganda is transmitted in the manner described in paragraph (a) of this section by a person who is not directly or indirectly affiliated or associated with, or supervised, directed, controlled, financed, or subsidized in whole or in part by, the agent or

any foreign principal of the agent, and the transmission of the propaganda is not subject to the direct or indirect supervision, direction, or control of, and no compensation or remuneration therefor is paid directly or indirectly by, the agent or any foreign principal of the agent, the agent shall be deemed to have complied with section 4 of the act if, at the time it is disseminated or caused to be disseminated by the agent,

(1) The political propaganda is marked or stamped to comply with section 4 of the act; and

(2) Copies of the political propaganda have been filed by the agent in accordance with section 4 of the act. [Rule 403]

§ 5.500 *Maintenance of books and records.* (a) Every person who is required to file a registration statement pursuant to section 2 (a) of the act shall keep and preserve in his possession all books and records which relate to any activities requiring his registration.

(b) Every registrant shall keep and preserve pursuant to section 5 of the act the following-described books and records:

(1) All correspondence, memoranda, cables, telegrams, teletype messages and other written communications to and from all foreign principals and all other persons, relating to the registrant's activities on behalf of, or in the interest of, foreign principals.

(2) All correspondence, memoranda, cables, telegrams, teletype messages and other written communications to and from all persons, other than foreign principals, relating to the registrant's political activity as defined in § 5.100 (a) (1), or relating to such activity on the part of any of the registrant's principals.

(3) Cryptographic paraphernalia, codebooks, cipher descriptions, and key books, or other things, used in the preparation of coded or enciphered messages or the translation thereof.

(4) Records containing the names and addresses of persons designated to receive any political propaganda as defined in § 5.100 (a) (10).

(5) All bookkeeping and other financial records relating to the registrant's activities on behalf of all foreign principals, including canceled checks, bank statements, and records of income and disbursements, showing names and addresses of all persons who have paid monies to the registrant or who have received monies from the registrant, the specific amounts so paid or received, and the date on which each item was paid or received.

(6) If the registrant is a corporation, partnership, association, or other combination of individuals, all minute books.

(7) Such books or records as will disclose the names and addresses of all employees and agents of the registrant, including persons no longer acting as employees.

(8) Such other books, records, and documents as are necessary properly to reflect the activities for which registration is required.

(c) Every registrant shall keep and preserve, pursuant to section 5 of the act, the books and records listed in para-

graph (b) of this section for a period of three years following the termination of his registration under § 5.260.

(d) Upon good and sufficient cause shown in writing to the Chief, Registration Section, a registrant may be permitted to destroy books and records in support of the information furnished in the registration statement which was filed five or more years prior to the date of the application to destroy. [Rule 500]

§ 5.501 *Inspection of books and records.* Officials of the Registration Section and of the Federal Bureau of Investigation are authorized to inspect books and records pursuant to section 5 of the act. [Rule 501]

§ 5.600 *Public examination of records.* Registration statements and dissemination reports filed in accordance with section 4 (a) of the act are available for public examination at the Registration Section, Department of Justice, Washington 25, D. C., from 10:00 a. m. to 4:00 p. m. on each official business day. [Rule 600]

§ 5.601 *Sale of copies of records.* (a) Photocopies of registration statements and dissemination reports filed in accordance with section 4 of the act will be sold to the public at the rate of fifty cents a photocopy of each page whether several copies of a single original page or one or more copies of several original pages are ordered.

(b) Estimates as to prices for copies and the time required for their preparation will be furnished upon request addressed to the Registration Section.

(c) Payment shall accompany the order and shall be made in cash, or by United States postal money order or certified bank check payable to the Treasurer of the United States. Postage stamps will not be accepted. [Rule 601]

This order shall become effective on the date of its publication in the FEDERAL REGISTER.

Dated: December 13, 1956.

HERBERT BROWNELL, Jr.,
Attorney General.

[F. R. Doc. 56-10245; Filed, Dec. 21, 1956;
8:45 a. m.]

TITLE 15—COMMERCE AND FOREIGN TRADE

Chapter III—Bureau of Foreign Commerce, Department of Commerce

Subchapter B—Export Regulations

[8th Gen. Rev. of Export Regs., Amdt. 22¹]

PART 373—LICENSING POLICIES AND RELATED SPECIAL PROVISIONS

CONFIRMATION OF COUNTRY OF ULTIMATE DESTINATION AND VERIFICATION OF ACTUAL DELIVERY

Section 373.2 *Confirmation of country of ultimate destination and verification*

¹ This amendment was published in Current Export Bulletin No. 777, dated December 20, 1956.

of actual delivery, paragraph (e) *Submission of delivery verification*, subparagraph (2) *Submission to the Bureau of Foreign Commerce* is amended to read as follows:

(2) *Submission to the Bureau of Foreign Commerce.* When notified to do so by the Bureau of Foreign Commerce, any person issued licenses covering shipments within the scope of this section shall: (i) Transmit to the foreign importer a written request for delivery verification at the time of making each shipment under the license (wherever possible, this request shall be submitted together with the related Bill of Lading or Air Waybill); (ii) obtain from the named importer a Delivery Verification which has been issued to the importer by his government covering the commodities described on the particular export license, or so much thereof (when complete shipment against the license will not be made) as the licensee will have shipped; and (iii) send the original copy of the Delivery Verification to the Bureau of Foreign Commerce within a reasonable time after clearance of the last exportation made under the license. If a Delivery Verification is required with respect to commodities covered by a license and the licensee makes partial shipments against the license, the licensee shall obtain a Delivery Verification for each partial shipment and retain it in his files until all Delivery Verifications respecting shipments against the license have been received by him. The licensee shall then send the original copies of all such Delivery Verifications to the Bureau of Foreign Commerce in one parcel.

Dept. of Commerce Schedule B.No.	Commodity	Submission dates	
		Fourth quarter, 1956	First quarter, 1957
654502	Nickel-copper alloy scrap (including monel scrap).	Nov. 27 to Dec. 19, 1956...	Jan. 2 to Mar. 15, 1957.

3. Section 382.51 *Supplement 1; Table of compliance orders currently in effect denying export privileges*, paragraph (b) *Table of compliance orders* is amended in the following particulars:

a. The following entries are added:

Name and address	Effective date of order	Expiration date of order	Export privileges affected	FEDERAL REGISTER citation
Compadimex, S. A. aka Cle. D'Importation et D'Exportation, 1 Pont de Meir, Union Bldg., Antwerp, Belgium.	10-30-56	Duration....	General and validated licenses, all commodities, any destination, also exports to Canada.	21 F. R. 8412, 11-2-56.
De Metz, Rene, 128 Bisschoppenhofsplein, Deurne (Antwerp), Belgium.	10-30-56	do.....	do.....	Do.
Van Der Zanden, Hendrik Frans, 1 Pont de Meir, Union Bldg., Antwerp, Belgium.	10-30-56	do.....	do.....	Do.

b. The following entry is deleted:

Name and address	Effective date of order	Expiration date of order	Export privileges affected	FEDERAL REGISTER citation
Wolf, Hans, Export-Import, Nussbaumallee 33, Berlin W. 9, Charlottenburg, Germany.	6-25-56 10-31-56	Indefinite....	General and validated licenses, all commodities, any destination, also exports to Canada.	21 F. R. 4936 7-3-56. 21 F. R. 8466, 11-3-56.

(Sec. 3, 63 Stat. 7, as amended; 50 U. S. C. App. 2023. E. O. 9630, 10 F. R. 12245, 3 CFR, 1945 Supp., E. O. 9919, 13 F. R. 59, 3 CFR, 1948 Supp.)

This amendment shall become effective as of December 20, 1956.

LORING K. MACY,
Director,
Bureau of Foreign Commerce.

[F. R. Doc. 56-10420; Filed, Dec. 21, 1956;
8:49 a. m.]

[8th Gen. Rev. of Export Regs., Amdt. 23¹]

PART 373—LICENSING POLICIES AND RELATED SPECIAL PROVISIONS

PART 382—DENIAL OR SUSPENSION OF EXPORT PRIVILEGES

MISCELLANEOUS AMENDMENTS

1. Section 373.41 *Nonferrous commodities, including ores, concentrates, or unrefined products*, paragraph (b) *Nickel scrap and nickel alloy scrap* is amended by adding a new subparagraph (3) to read as follows:

(3) *Time for submission of applications.* Applications for licenses to export nickel-copper alloy scrap (including monel scrap), Schedule B No. 654502, shall be submitted in accordance with the time schedules set forth in § 373.71.

This part of the amendment shall become effective as of December 20, 1956.

2. Section 373.71 *Supplement 1; Time schedules for submission of applications to export certain Positive List commodities* is amended by adding the following entry:

c. The following entries are amended to read as follows:

Name and address	Effective date of order	Expiration date of order	Export privileges affected	FEDERAL REGISTER citation
A. C. L. S. A., s/a Automobile Commerciale Internationale, 1 rue de Rive, Geneva, Switzerland.	10-4-56	1-28-57	General and validated licenses, all commodities, any destination, also exports to Canada.	21 F. R. 7703, 10-9-56. 21 F. R. 9749, 12-8-56. 21 F. R. 7703, 10-9-56.
Americauto, 44 rue Brunel, Paris, France.	10-4-56	1-28-57	do.	21 F. R. 9749, 12-8-56. 21 F. R. 7703, 10-9-56.
Automobile Commerciale Internationale, 1 rue de Rive, Geneva, Switzerland.	10-4-56	1-28-57	do.	21 F. R. 9749, 12-8-56. 21 F. R. 7703, 10-9-56.
Automotive Equipment Supply Corporation, 8-10 Bridge St., New York, N. Y., and Levallois-Perret (Seine) France.	10-4-56	1-28-57	do.	21 F. R. 7703, 10-9-56. 21 F. R. 9749, 12-8-56.
Bensa, Jacques d/b/a Americauto, 44 rue Brunel, Paris, France.	10-4-56	1-28-57	do.	21 F. R. 7703, 10-9-56. 21 F. R. 9749, 12-8-56.
Inex-Auto, S. A. R. L., 86 rue du President Wilson, Levallois-Perret (Seine), France.	10-4-56	1-28-57	do.	21 F. R. 7703, 10-9-56. 21 F. R. 9749, 12-8-56.
Musmann, George, 8-10 Bridge St., New York, N. Y., and Levallois-Perret (Seine), France.	10-4-56	1-28-57	do.	21 F. R. 7703, 10-9-56. 21 F. R. 9749, 12-8-56.

(Sec. 3, 63 Stat. 7, as amended; 50 U. S. C. App. 2023. E. O. 9630, 10 F. R. 12245, 3 CFR, 1945 Supp., E. O. 9919, 13 F. R. 59, 3 CFR, 1948 Supp.)

LORING K. MACY,
Director,
Bureau of Foreign Commerce.
[F. R. Doc. 56-10421; Filed, Dec. 21, 1956; 8:49 a. m.]

[8th Gen. Rev. of Export Regs. Amdt. P. L. 6]¹

PART 399—POSITIVE LIST OF COMMODITIES AND RELATED MATTERS
MISCELLANEOUS AMENDMENTS

Section 399.1 Appendix A—Positive List of Commodities is amended in the following particulars:

1. The following commodities are added to the Positive List:

Dept. of Commerce Schedule B No.	Commodity	Unit	Processing code and related commodity group	GLV dollar-value limits	Validated license required
708010	Electronic-type components: Components, n. e. c., for electronic apparatus and specially fabricated parts, n. e. c.: Synthetic quartz crystal plates (report natural quartz plates in 595000). ¹				
708100	Regulated power supplies, n. e. c. (report calibrated power supplies in 708325). ¹				
			RARA 50	100	RO
			EIME 3	100	RO

¹ This commodity is subject to the IC/DV procedure (see § 373.2), effective Feb. 4, 1957.

This part of the amendment shall become effective as of December 27, 1956, except as indicated in the footnote.

¹ This amendment was published in Current Export Bulletin No. 777, dated December 20, 1956.

2. The following entries set forth below are substituted for entries presently on the Positive List. Where the Positive List contains more than one entry under a Schedule B number, the entry to be superseded is identified by a numerical reference in parentheses following the commodity description in the revised entry:

Dept. of Commerce Schedule B No.	Commodity	Unit	Processing code and related commodity group	GLV dollar-value limits	Validated license required
523110	Optical instrument glass and glass blanks, including synthetic crystal; Synthetic crystal blanks, rough and semifinished, of lithium fluoride or calcium fluoride (report optical crystals in 599098; and lenses, prisms and windows, including finished blanks, in 914750). (3) ¹³ Carbon or graphite products (natural and artificial): Graphite greases and lubricants, petroleum base. (2) ¹⁹ Synthetic optical crystals of lithium fluoride or calcium fluoride (report rough and semifinished blanks in 523110; and lenses, prisms and windows, including finished blanks, in 914750). (2) ¹³	Lb.	SATE	None	RO
548098 599098	Metal powders: Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	Lb.	PETR CDGS	25 None	RO RO
619159	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	Lb.	MINL	100	RO
664998	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	Lb.	MINL	100	RO
707550	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴		SATE	25	RO
744100	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	No.	TOOL	500	RO
744100	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	No.	TOOL	500	R
744383	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴		TOOL	None	RO
745805 830587	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	Lb.	TOOL SALT	500 100	RO RO
825980	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	Lb.	RESN 66	100	RO
836220	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	Lb.	SALT	100	RO
914750	Boron and mixtures of metal powders containing 10 percent or more boron. (1) ⁴ Nonferrous metals and alloys in crude form, scrap, and semi-fabricated forms, n. e. c. (specify by name): Boron metal, and alloys containing 10 percent or more boron, all forms (including grains and mixtures containing 10 percent or more boron) report boron powder in 619159. (1) ⁴ X-ray apparatus, and parts, n. e. c.: Parts, n. e. c., specially fabricated for dosimeters, dosimeter charging units, and dosimeter charger readers (report parts for dosimeter charger readers not adaptable to X-ray in 919080). (5) ¹³ Power-driven metalworking machine tools (nonportable), and parts: Internal grinding machines, all types, having either of the following characteristics: high frequency (over 60 cycles) spindles; or a spindle capable of speeds exceeding 60,000 r. p. m. (1) ²³ Other internal cylindrical grinding machines as follows: centerless; automatic feed; automatic sizing; or with any other automatic features. (Specify maximum spindle speeds.) (2) ²⁴ Accessories and attachments, n. e. c., for power-driven nonportable machine tools, n. e. c.: Accessories and attachments, n. e. c., for machine tools, and specially fabricated parts n. e. c.: Internal grinding machine wheel spindles and spindle assemblies, all types, having either of the following characteristics: high frequency (over 60 cycles) or capable of speeds exceeding 60,000 r. p. m. (report internal grinding machines in 744100. (2) ²³ Machines for flame and grinding of gears. ²⁰ (2) ²³ Weel killers consisting primarily of boron compounds (e. g., borates, boron). ²⁴	No.	SATE	None	RO

⁴ The letter "A" is added in the column headed "Commodity Lists," indicating that the commodity is subject to the IC/DV procedures (see § 373.2 of this chapter), effective Feb. 4, 1957.

¹³ The commodity description is revised without substantive change.

¹⁹ The unit of quantity is changed.

²⁰ The commodity coverage is decreased.

²³ The commodity coverage is increased, effective Dec. 27, 1956.

²⁴ The added commodities are subject to the IC/DV procedure, effective Feb. 4, 1957 (see § 373.2 of this chapter).

⁴ The requirement to specify the maximum spindle speed is added.

This part of the amendment shall become effective as of December 20, 1956, unless otherwise indicated in the footnotes.

Shipments of any commodities removed from general license to Country Group R or Country Group O destinations as a result of changes set forth in Parts 1 and 2 above which were on dock for lading, on lighter, laden aboard an exporting carrier or in transit to a port of exit pursuant to actual orders for export prior to 12:01 a. m., December 27, 1956, may be exported under the previous general license provisions up to and including January 21, 1957. Any such shipment not laden aboard the exporting carrier on or before January 21, 1957 requires a validated license for export.

(Sec. 3, 63 Stat. 7, as amended; 50 U. S. C. App. 2023. E. O. 9630, 10 F. R. 12245, 3 CFR, 1945 Supp., E. O. 9919, 13 F. R. 59, 3 CFR, 1948 Supp.)

LORING K. MACY,
Director,
Bureau of Foreign Commerce.

[F. R. Doc. 56-10422; Filed, Dec. 21, 1956;
8:49 a. m.]

TITLE 21—FOOD AND DRUGS

Chapter I—Food and Drug Administration, Department of Health, Education, and Welfare

PART 3—STATEMENTS OF GENERAL POLICY OR INTERPRETATION

PART 146a—CERTIFICATION OF PENICILLIN AND PENICILLIN-CONTAINING DRUGS

PART 146c—CERTIFICATION OF BACITRACIN AND BACITRACIN-CONTAINING DRUGS

MISCELLANEOUS AMENDMENTS

Under the authority vested in the Secretary of Health, Education, and Welfare by the Federal Food, Drug, and Cosmetic Act (secs. 507, 701, 52 Stat. 1055, 59 Stat. 463 as amended; 21 U. S. C. 357, 371) and delegated to the Commissioner of Food and Drugs by the Secretary (20 F. R. 1996) the regulations for certification of antibiotic and antibiotic-containing drugs (21 CFR Parts 146a, 146c; 21 F. R. 608, 1417, 1561, 8986) are amended as indicated below:

1. Section 3.8 Notice to manufacturers, packers, and distributors of penicillin-containing drugs for veterinary use is revoked.

2. Section 146a.51 (f) (5) (iv) is changed to read as follows:

§ 146a.51 Penicillin powder. * * *
(f) Exemption of buffered penicillin powder. * * *

(5) * * *

(iv) As an aid in reducing the incidence and severity of bloat in cattle on legume pastures: *Provided*, That:

(a) The drug is intended to be administered in water or feed, and when used as directed in its labeling each animal receives not less than 75,000 units of penicillin per day; or

(b) The drug is a mixture of procaine penicillin and sodium chloride that contains not less than 793,000 units of penicillin per pound; its moisture content is not more than 0.1 percent if

granulated salt is used and not more than 0.25 percent if rock salt is used; it is intended for administering on a continuous "free choice" basis; and its labeling bears information that not more than 2 days' supply of the drug shall be put before cattle at one time, after which the unused portion shall be discarded and replaced by a fresh supply.

3. In § 146e.427 Feed grade bacitracin powder oral veterinary * * *, paragraph (a) Standards of identity * * * is amended by changing the words "10 grams" in the third sentence to read "2.5 grams".

Notice and public procedure are not necessary prerequisites to the promulgation of this order, and I so find, since it was drawn in collaboration with interested members of the affected industry, since it relaxes existing requirements, and since it would be against public interest to delay providing for the amendments set forth above.

I further find that the animal feed and veterinary drug preparations exempted from certification by amendments 1 and 2 need not comply with the requirements of sections 502 (1) and 507 of the Federal Food, Drug, and Cosmetic Act in order to insure their safety and efficacy, provided the preparations comply with all other conditions prescribed by the regulations.

Effective date. This order shall become effective on the date of its publication in the FEDERAL REGISTER.

(Sec. 701, 52 Stat. 1055, as amended; 21 U. S. C. 371. Interpret or apply sec. 507, 59 Stat. 463 as amended; 21 U. S. C. 357)

Dated: December 18, 1956.

[SEAL] JOHN L. HARVEY,
Deputy Commissioner
of Food and Drugs.

[F. R. Doc. 56-10403; Filed, Dec. 21, 1956;
8:45 a. m.]

PROPOSED RULE MAKING

DEPARTMENT OF AGRICULTURE

Commodity Stabilization Service

[7 CFR Part 723]

CIGAR-FILLER TOBACCO, AND CIGAR-FILLER AND BINDER TOBACCO

NOTICE OF DETERMINATION TO BE MADE BY SECRETARY ON WHETHER TO TREAT CIGAR-FILLER AND BINDER (TYPES 51 AND 52) TOBACCO AS A KIND OF TOBACCO

Section 301, paragraph (b) (15) of the Agricultural Adjustment Act of 1938, as amended, provides that any one or more of the types of tobacco comprising any kind of tobacco shall be treated as a "kind of tobacco" for the purposes of the act if the Secretary finds there is a difference in supply and demand conditions among such types of tobacco which results in a difference in the adjustments needed in the marketing thereof in order to maintain supplies in line with demand.

Pursuant thereto, the Secretary is preparing to make a finding and determination as to whether cigar-filler and binder (types 51-52) tobacco should be treated as a "kind of tobacco" separate from the other types comprising cigar-filler and binder tobacco for the purposes of the act.

In making the above described determinations, consideration will be given to any data, views and recommendations pertaining thereto which are submitted in writing to the Director, Tobacco Division, Commodity Stabilization Service, United States Department of Agriculture, Washington 25, D. C., on or before January 3, 1957.

Issued at Washington, D. C., this 20th day of December 1956.

[SEAL] WALTER C. BERGER,
Administrator.

[F. R. Doc. 56-10458; Filed, Dec. 21, 1956;
8:51 a. m.]

NOTICES

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[Document 144; Classification 55]

ARIZONA

SMALL TRACT CLASSIFICATION

DECEMBER 17, 1956.

1. Pursuant to authority delegated by Document No. 43, Arizona, effective May 19, 1955 (20 F. R. 3514-15), I hereby classify the following described land totalling 600 acres in Maricopa County, Arizona, as suitable for lease and sale for residence purposes under the Small Tract

Act of June 1, 1938 (52 Stat. 609; 43 U. S. C. 682a), as amended:

GILA AND SALT RIVER MERIDIAN

T. 4 N., R. 1 E.,

Sec. 8: E $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$;

Sec. 9: NE $\frac{1}{4}$ NE $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$;

Sec. 17: E $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$.

2. Classification of the above described land by this order segregates it from all appropriations, including locations under the mining laws, except as to applications under the mineral leasing laws.

3. The land classified by this order shall not become subject to application under the Small Tract Act of June 1, 1938 (52 Stat. 609; 43 U. S. C. 682a), as

amended, until it is so provided by an order to be issued by an authorized officer, opening the land to application or bid with a preference right to veterans of World War II and of the Korean conflict and other qualified persons entitled to preference under the act of September 27, 1944 (58 Stat. 497; 43 U. S. C. 279-284), as amended.

4. All valid applications filed prior to December 14, 1956, will be granted, as soon as possible, the preference right provided for by 43 CFR 257.5 (a).

E. R. TRAGITT,
State Lands and Minerals
Staff Officer.

[F. R. Doc. 56-10405; Filed, Dec. 21, 1956;
8:46 a. m.]

[73402]

WISCONSIN

NOTICE OF FILING OF PLAT OF SURVEY AND ORDER PROVIDING FOR OPENING OF PUBLIC LANDS

1. A plat of survey of the omitted lands described below will be officially filed in the Eastern States Land Office, Washington 25, D. C., effective at 10:00 a. m., on January 20, 1957:

FOURTH PRINCIPAL MERIDIAN, WISCONSIN

T. 32 N., R. 14 E.,
Sec. 16, Lot 6;
Sec. 21, Lot 6.

The area described aggregates 0.57 acre.

2. The plat represents the survey of an island in Sawyer Lake which was not included in the original survey of the township which is represented on the approved undated plat.

3. Sections 16 and 21, above township and range, were added to and made a part of Nicolet National Forest by proclamation, dated November 13, 1933.

4. Available information indicates that the island is very substantial of glacial formation rising to an elevation of 20 feet above Sawyer Lake; that it is covered with a heavy growth of pine, birch, poplar, spruce and cedar and that the island has only a very small area of wet land.

5. Anyone having a valid existing right to the lands, initiated prior to the date of the forest withdrawal of the lands, should assert the same within one year from the date hereof by filing an application under the act of February 27, 1925 (43 Stat. 1013; 43 U. S. C. 994), and the act of August 24, 1954 (68 Stat. 789).

6. Claimants under the 1925 act, supra, have a preferred right of application for a period of 90 days from January 20, 1957. Applications under the 1954 act, supra, must be filed within one year from January 20, 1957. No patents will be issued prior to January 20, 1958.

7. Information showing the periods during which and the conditions under which veterans and others may file applications for these lands may be obtained on request from the Acting Manager, Eastern States Office, Bureau

of Land Management, Department of the Interior, Washington 25, D. C.

H. K. SCHOLL,
Acting Manager.

[F. R. Doc. 56-10406; Filed, Dec. 21, 1956;
8:46 a. m.]

Office of the Secretary

[Order 2819]

COMMISSIONER OF RECLAMATION

DELEGATION OF AUTHORITY TO NEGOTIATE CONTRACTS FOR SERVICES OF ARCHITECTURAL AND ENGINEERING FIRMS

DECEMBER 17, 1956.

SECTION 1. *Delegation.* The Commissioner of Reclamation is authorized to exercise the authority delegated on November 30, 1956 by the Administrator of General Services to the Secretary of the Interior, for the period ending June 30, 1957, to negotiate, without advertising, under section 302 (c) (4) of the Federal Property and Administrative Services Act of 1949, as amended (41 U. S. C., sec. 252 et seq.), contracts for professional architectural and engineering services for the designing and testing of flood lighting of the Grand Coulee Dam spillway as authorized by Title II of the Public Works Appropriation Act, 1957, approved July 2, 1956, Public Law 641, 84th Congress, 2d Session (70 Stat. 474). This delegation of authority is subject to all provisions of Title III of the Federal Property and Administrative Services Act with respect to negotiated contracts, and to all other provisions of law.

SEC. 2. *Redelegation.* The Commissioner of Reclamation may, in writing, redelegate or authorize written redelegation of the authority granted in section 1 of this order. Each such redelegation shall be published in the FEDERAL REGISTER.

FRED A. SEATON,
Secretary of the Interior.

[F. R. Doc. 56-10407; Filed, Dec. 21, 1956;
8:46 a. m.]

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

[P. & S. Docket No. 1211]

ST. PAUL UNION STOCKYARDS CO.

NOTICE CONCERNING PETITION FOR MODIFICATION OF RATE ORDER

On February 18, 1956, there was published in the FEDERAL REGISTER (21 F. R. 1151) a notice that the St. Paul Union Stockyards Company, South St. Paul, Minnesota, filed a petition on February 7, 1956, requesting that it be granted authority to modify its current schedule of rates and charges (Tariff No. 25) by including therein certain rates and charges in lieu of the corresponding rates and charges then in effect, and that the current rates and charges as so modified be continued in effect to and including March 31, 1958. The notice set forth the

proposed modifications in the rates and charges.

On March 23, 1956, the Livestock Division, Agricultural Marketing Service, filed an answer opposing the petition. The rates and charges in effect at that time were due to expire on March 31, 1956. Orders were issued continuing those rates and charges in effect until February 28, 1957.

On December 5, 1956, the St. Paul Union Stockyards Company filed a supplemental petition renewing its petition of February 7, 1956, and requesting that, for the reasons set forth in that petition and the additional reasons set forth in the recent petition, it be authorized to modify the current rates and charges as set forth in the notice published in the FEDERAL REGISTER on February 18, 1956.

All interested persons who desire to be heard in this matter shall notify the Hearing Clerk, United States Department of Agriculture, Washington 25, D. C., within 15 days after publication of this notice in the FEDERAL REGISTER.

Done at Washington, D. C., this 18th day of December 1956.

[SEAL] DAVID M. PETTUS,
Acting Director, Livestock Division, Agricultural Marketing Service.

[F. R. Doc. 56-10404; Filed, Dec. 21, 1956;
8:46 a. m.]

DEPARTMENT OF COMMERCE

Maritime Administration

U. S. FLAG SERVICE REQUIREMENTS, ROUTE 24

NOTICE OF AMENDMENTS TO CONCLUSIONS AND DETERMINATIONS BY MARITIME ADMINISTRATOR

Notice is hereby given that on December 18, 1956, the Maritime Administrator, acting pursuant to section 211 of the Merchant Marine Act, 1936, as amended, found and determined that effective July 1, 1957 the United States flag service requirements of United States foreign Trade Route No. 24 as published in the FEDERAL REGISTER issues of January 6, 1955 (20 F. R. 168) and March 17, 1955 (20 F. R. 1613) should be amended by deleting the last two paragraphs of the January 6, 1955 determinations and in accordance with his action of October 29, 1954, ordered that the following amended findings and determinations reached by the Maritime Administrator with respect to said route be published in the FEDERAL REGISTER.

1. Requirements for United States flag operation on an integrated basis on Trade Route No. 24 are approximately two sailings per month and,

2. The C-3 type freighters now operated on the route are suitable and efficient ships for operation thereon and under integrated operation 6 to 7 such ships are required to serve the route adequately.

Any person, firm or corporation having any interest in the foregoing who desires to offer comments and views there-

on should submit same in writing to the Secretary, Maritime Administration, Department of Commerce, Washington 25, D. C., within fifteen (15) days from the date of publication of this notice in the FEDERAL REGISTER. The Maritime Administrator will consider these comments and views and take such action with respect thereto as in his discretion he deems warranted.

Dated: December 19, 1956.

By order of the Maritime Administrator.

[SEAL]

JAMES L. PIMPER,
Secretary.

[F. R. Doc. 56-10413; Filed, Dec. 21, 1956;
8:48 a. m.]

Office of the Secretary

JOHN H. CLEMONS

STATEMENT OF CHANGES IN FINANCIAL INTERESTS

In accordance with the requirements of section 710 (b) (6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests as reported in the FEDERAL REGISTER:

The statement of changes in financial interest signed by me on September 24, 1956, which appeared as Federal Register Document 56-7949 on page 7581 of the FEDERAL REGISTER for October 3, 1956, should read that the statement was made as of September 1, 1956, instead of August 1, 1956.

This statement is made as of December 17, 1956.

JOHN H. CLEMONS.

[F. R. Doc. 56-10423; Filed, Dec. 21, 1956;
8:49 a. m.]

FEDERAL COMMUNICATIONS COMMISSION

[Docket No. 11821; FCC 56M-1158]

GOOD MUSIC STATION, INC., AND RKO
TELERADIO PICTURES, INC.

ORDER CONTINUING PREHEARING CONFERENCE

In the matter of the Good Music Station, Inc. (Assignor) and RKO Teletadio Pictures, Inc. (Assignee), Docket No. 11821, File Nos. BAPL-114, BALH-236; for assignment of license and construction permit of Station WGMS, Bethesda, Maryland, and license of Station WGMS-FM, Washington, D. C.

The Hearing Examiner having under consideration (1) a motion to postpone hearing, filed by protestant on December 18, 1956, requesting a continuance of the hearing now scheduled for January 11, 1957, "until fifteen days after the Commission finds that the applicants have complied with the Commission order herein released November 21, 1956"; (2) the date of a further prehearing conference now scheduled for January 4, 1957; (3) the date for the furnishing by counsel for protestant to the other parties of a request for information, now set

for December 20, 1956; and (4) an oral argument held on December 18, 1956;

It appearing that the request for continuance of the January 11, 1957, hearing is predicated on the contention that the status quo ante has not in fact been restored as allegedly required by the Court of Appeals and the Commission and that such restoration is a condition precedent to the commencement of the hearing; but that these allegations furnish no basis for the continuance of the hearing, there having been no valid relationship established between the reassignment, even assuming it was not in compliance with the mandate of the Court and the order of the Commission, and the ability of protestant to conduct his case at the hearing, which under statute is to be expedited, and no good cause for continuance was shown;

It is ordered, This 18th day of December 1956, that (1) the motion to postpone hearing is denied; (2) the December 20 date above mentioned is extended to December 27, 1956, with the understanding that if counsel for assignor and assignee furnish the requested information by January 3, 1957, counsel for protestant will not request an extension of the January 4, 1957, date for furnishing exhibits, provided there is no change in the January 11, 1957, hearing date; and (3) the further prehearing conference is continued from January 4 to January 7, 1957, at 12:30 p. m., in the offices of the Commission, Washington, D. C.

FEDERAL COMMUNICATIONS
COMMISSION,

[SEAL] MARY JANE MORRIS,
Secretary.

[F. R. Doc. 56-10424; Filed, Dec. 21, 1956;
8:50 a. m.]

[Docket No. 11885]

MORRISON CAB CO.

ORDER TO SHOW CAUSE

In the matter of E. W. Morrison d/b as Morrison Cab Company, Hammond, Louisiana, Docket No. 11885; order to show cause why the license for Taxicab Radio Station KKC 600 should not be revoked.

There being under consideration the matter of certain alleged violations of the Commission's rules in connection with the operation of Taxicab Radio Station KKC 600, licensed to E. W. Morrison, d/b as Morrison Cab Company, 89 Cab Stand, Hammond, Louisiana;

It appearing, that, pursuant to § 1.401 of the Commission's rules, notices of violations of the Commission's rules in connection with the operation of said radio station were mailed to said licensee as follows:

(a) Notice dated March 16, 1956, specifying that said licensee violated § 16.160 (a) of the Commission's rules by failing to make available for inspection on March 13, 1956, the records of transmitter measurements required to be made by § 16.108 of the Commission's rules at intervals not to exceed six months, and that the records which were made available indicated that such

transmitter measurements were made last in 1951; and

(b) Notice dated May 23, 1956, specifying that said licensee had failed to comply with § 16.159 of the Commission's rules by failing to respond to the above-mentioned notice dated March 16, 1956; and

(c) Notice dated July 30, 1956, specifying that said licensee had failed to comply with § 16.159 of the Commission's rules by failing to respond to the above-mentioned notice dated March 16, 1956; and

It further appearing that, despite a letter of warning sent to the licensee by registered mail on September 28, 1956, and received by the licensee's agent on October 1, 1956, in which the above-mentioned violations were specified again and the licensee was requested to notify the Commission within fifteen (15) days from date of receipt of said letter of the steps he had taken to bring the operation of his radio station into compliance with the Commission's rules, to date no explanation or other response has been received from the licensee:

It is ordered, This 18th day of December 1956, pursuant to the provisions of section 312 (a) (4) and (c) of the Communications Act of 1934, as amended, that the said E. W. Morrison show cause why the aforesaid taxicab radio station license should not be revoked and appear and give evidence in respect thereto at a hearing¹ to be held at the offices of the Commission in Washington, D. C., commencing at 10:00 a. m. on the 25th day of February 1957 and

It is further ordered, That the Secretary send a copy of this Order by Registered Mail—Return Receipt Requested to said E. W. Morrison, d/b as Morrison Cab Company, 89 Cab Stand, Hammond, Louisiana.

Released: December 18, 1956.

FEDERAL COMMUNICATIONS
COMMISSION,

[SEAL] MARY JANE MORRIS,
Secretary.

[F. R. Doc. 56-10425; Filed, Dec. 21, 1956;
8:50 a. m.]

¹ Section 1.402 of the Commission's rules provides that in order to have the opportunity to appear before the Commission at the time and place specified in an order to show cause, a licensee shall within thirty (30) days from the date of the receipt of a show cause order submit a written statement informing the Commission whether said licensee will appear at the designated hearing and present evidence upon the matters specified, or whether the rights to such a hearing are waived. Waiver of the hearing may be accompanied by a statement setting forth the reasons why the licensee believes that an order of revocation should not be issued. A waiver unaccompanied by such a statement will be deemed to be an admission of the allegations specified in the order to show cause. Failure to respond to a show cause order within the above-mentioned thirty (30) day period, or, having informed the Commission in writing within the above-mentioned thirty (30) day period that the licensee will appear at the hearing and present evidence upon the matter specified and then failing to appear at the hearing, will be deemed to be a waiver of the right to a hearing and an admission of the allegations specified in the order to show cause.

[Docket Nos. 11886, 11887; FCC 56M-1155]

VOLUSIA COUNTY BROADCASTING CORP. AND
C. H. PACKHAM

ORDER SCHEDULING HEARING

In re applications of Volusia County Broadcasting Corporation, Daytona Beach, Florida, Docket No. 11886, File No. BP-10396; C. H. Packham, Ormond, Florida, Docket No. 11887, File No. BP-10572; for construction permits.

It is ordered, this 17th day of December 1956, that Hugh B. Hutchison will preside at the hearing in the above-entitled proceeding which is hereby scheduled to commence on February 19, 1957, in Washington, D. C.

Released: December 18, 1956.

FEDERAL COMMUNICATIONS
COMMISSION,[SEAL] MARY JANE MORRIS,
Secretary.[F. R. Doc. 56-10426; Filed, Dec. 21, 1956;
8:50 a. m.]

[Docket Nos. 11888, 11889; FCC 56M-1154]

JEFFERSON COUNTY BROADCASTING CO. AND
KERMIT F. TRACY

ORDER SCHEDULING HEARING

In re applications of Louis Alford, Phillip D. Brady and Albert Mack Smith, d/b as Jefferson County Broadcasting Company, Pine Bluff, Arkansas, Docket No. 11888, File No. BP-10528; Kermit F. Tracy, Fordyce, Arkansas, Docket No. 11889, File No. BP-10691; for construction permits.

It is ordered, This 17th day of December 1956, that Thomas H. Donahue will preside at the hearing in the above-entitled proceeding which is hereby scheduled to commence on February 19, 1957, in Washington, D. C.

Released: December 18, 1956.

FEDERAL COMMUNICATIONS
COMMISSION,[SEAL] MARY JANE MORRIS,
Secretary.[F. R. Doc. 56-10427; Filed, Dec. 21, 1956;
8:50 a. m.]

FEDERAL POWER COMMISSION

[Docket Nos. G-10669, G-10693]

HOWELL, HOLLOWAY & HOWELL AND TEXAS
GAS TRANSMISSION CORP.NOTICE OF CONSOLIDATION OF PROCEEDINGS
AND DATE OF HEARING

DECEMBER 18, 1956.

Take notice that the above related matters should be heard on a consolidated record and disposed of as promptly as possible under the applicable rules and regulations and to that end:

Take further notice that, pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Power Commission by sections 7 and 15 of the Natural Gas Act, and the Commission's rules of practice and procedure, a hearing will be held on January 10, 1957, at 9:30 a. m., e. s. t., in a

hearing room of the Federal Power Commission, 441 G Street NW., Washington, D. C., concerning the matters involved in and the issues presented by the applications filed in the above-entitled proceedings: *Provided, however,* That the Commission may, after a non-contested hearing, dispose of the proceedings pursuant to the provisions of § 1.30 (c) (1) of the Commission's rules of practice and procedure.

Due notice of the respective application has been had by publication in the FEDERAL REGISTER, no petition to intervene or protest to the granting of the applications have been received. Failure of any party to appear at and participate in the hearing shall be construed as waiver of and concurrence in omission herein of the intermediate decision procedure in cases where a request for waiver is made. Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicants to appear or be represented at the hearing.

[SEAL]

J. H. GUTRIDE,
Acting Secretary.[F. R. Doc. 56-10417; Filed, Dec. 21, 1956;
8:48 a. m.]

[Docket No. G-10850]

COLORADO INTERSTATE GAS CO.

NOTICE OF APPLICATION AND DATE OF
HEARING

DECEMBER 18, 1956.

Take notice that Colorado Interstate Gas Company (Applicant), a Delaware corporation with principal place of business at Colorado Springs National Bank Building, Colorado Springs, Colorado, filed in Docket No. G-10850, on August 2, 1956, as supplemented September 4 and November 26, 1956, an application pursuant to section 7 of the Natural Gas Act (act), for a certificate of public convenience and necessity authorizing it to construct and operate certain proposed natural gas transmission facilities, and for permission and approval to abandon certain existing facilities, all as herein-after described, subject to the jurisdiction of the Commission, all as more fully represented in the application which is on file with the Commission and open for public inspection.

Applicant proposes to abandon by sale and transfer certain existing facilities located in or near Denver, Pueblo and Canon City, Colorado, to Public Service Company of Colorado, Pueblo Gas and Fuel Company, and The Greeley Gas Company, distributing customers serving these areas, in order for Applicant to consolidate its measuring facilities outside the respective city limits, so that these customers will again be receiving town-border deliveries. Because of the rapid growth of the areas involved, Applicant's present high pressure transmission facilities and meter stations, proposed to be transferred, have become surrounded by residences, schools and busy streets and are causing hazardous conditions. After transfer, the facilities

involved will be operated at distribution pressures, thus relieving such situation.

Applicant also proposes to transfer certain facilities located in or near Pueblo to The Colorado Fuel and Iron Corporation in order to establish a new delivery point outside the security fences surrounding that plant so that its measuring facilities can be accessible during any future labor disturbances. In addition to the facilities to be transferred, certain other facilities are proposed to be retired from gas plant service, and salvaged or abandoned in place.

The facilities in the Denver area which Applicant proposes to transfer to Public Service Company of Colorado consist of approximately 15.2 miles of pipe lines varying in size from 8 inch to 20 inch in diameter and 6 metering and regulating stations. In the Pueblo area, 3.1 miles of the 8-inch North Pueblo lateral is proposed to be transferred to Pueblo Gas and Fuel Company, as well as the north and south Pueblo meter stations. Applicant proposes to transfer to Colorado Fuel and Iron in this same area certain pipe and other facilities in or near Applicant's Colorado Fuel and Iron meter station, upon the completion by Applicant of its proposed new South Pueblo meter station (which will permit measurement to Colorado Fuel and Iron and South Pueblo at one station). In the Canon City area, Applicant proposes to transfer to The Greeley Gas Company approximately 4,211 feet of 6-inch diameter pipe line.

Applicant also proposes to construct and operate the following new facilities:

(1) A new meter station at Hampden Avenue in South Denver; this station will be remotely controlled from the East Denver control station and will be more economical to operate than the present South Denver Station, which will be transferred.

(2) A new meter station 3.1 miles east of the existing station for North Pueblo.

(3) A new South Pueblo meter station, to meter gas to both Pueblo Gas and Fuel Company and to Colorado Fuel and Iron Corporation.

(4) 9.25 miles of 26-inch loop line from the East Denver control station to the new Hampden Ave. station in South Denver.

(5) 26.4 miles of 8-inch pipe line looping the Portland, Colorado, lateral serving the Portland-Florence-Canon City area.

Applicant was previously granted a certificate at Docket No. G-2120 to construct the 8-inch Portland loop; however, that certificate was subsequently cancelled upon Applicant's request. Applicant states that deliveries have been increasing in the Portland area since January 1954 and conditions necessitate the new loop line.

The 9.25 miles of 26-inch loop line is to extend from East Denver to South Denver. Applicant alleges that it is required to meet increased demands in South Denver and on Applicant's Amarillo-Denver line. It will enable Applicant to utilize gas that it will receive from Pacific Northwest Pipeline Corporation which could not be fully utilized without the proposed loop.

All of the facilities which Applicant proposes to transfer to the distribution companies and to Colorado Fuel and Iron will be sold at their net book value. As of June 30, 1956, the net book value of the facilities proposed to be transferred to the distribution companies amounted to \$327,351, and, to Colorado Fuel and Iron, amounted to \$5,069, and the value of the facilities to be salvaged or retired in place amounted to \$6,791. The aggregate net book value of all facilities to be transferred, salvaged, or retired in place, was \$339,211 as of June 30, 1956.

The total cost of the new facilities proposed to be constructed is estimated at \$1,600,297 which includes \$90,583 for general overheads and interest during construction. The funds required for construction of facilities will be provided from cash on hand.

This matter is one that should be disposed of as promptly as possible under the applicable rules and regulations and to that end:

Take further notice that, pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Power Commission by sections 7 and 15 of the Natural Gas Act, and the Commission's rules of practice and procedure, a hearing will be held on Thursday, January 17, 1957, at 9:30 a. m., e. s. t., in a hearing room of the Federal Power Commission, 441 G Street NW., Washington, D. C., concerning the matters involved in and the issues presented by such supplemented application: *Provided, however*, That the Commission may, after a non-contested hearing, dispose of the proceedings pursuant to the provisions of § 1.30 (c) (1) or (2) of the Commission's rules of practice and procedure.

Protests or petitions to intervene may be filed with the Federal Power Commission, Washington 25, D. C., in accordance with the rules of practice and procedure (18 CFR 1.8 or 1.10) on or before January 7, 1957. Failure of any party to appear at and participate in the hearing shall be construed as waiver of and concurrence in omission herein of the intermediate decision procedure in cases where a request therefor is made. Under the procedure herein provided for unless otherwise advised, it will be unnecessary for Applicant to appear or be represented at the hearing.

[SEAL] J. H. GUTRIDE,
Acting Secretary.

[F. R. Doc. 56-10418; Filed, Dec. 21, 1956; 8:48 a. m.]

[Docket No. G-11277]

**TENNESSEE GAS TRANSMISSION CO.
NOTICE OF APPLICATION AND DATE OF
HEARING**

DECEMBER 18, 1956.

Take notice that Tennessee Gas Transmission Company (Applicant), a Delaware corporation, principal place of business at Commerce Bldg., Houston, Texas, filed an application on October 23, 1956, in Docket No. G-11277 for a certificate of public convenience and necessity, pursuant to section 7 (c) of the

No. 248—5

Natural Gas Act, authorizing it to increase the volume of natural gas sold and delivered to Holly Springs, Mississippi, by an additional 500 Mcf per day upon a firm basis. Applicant proposes to utilize a portion of its existing unallocated design day capacity to serve additional gas to Holly Springs. No new facilities are to be constructed.

Pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Power Commission by sections 7 and 15 of the Natural Gas Act, and the Commission's rules of practice and procedure, a hearing will be held on the 21st day of January 1957, at 9:30 a. m., e. s. t., in a hearing room of the Federal Power Commission, 441 G Street NW., Washington, D. C., concerning the matters involved in and the issues presented by the application: *Provided, however*, That the Commission may, after a non-contested hearing, dispose of the proceedings pursuant to the provisions of § 1.30 (c) (1) or (2) of the Commission's rules of practice and procedure. Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicant to appear or be represented at the hearing.

Protests or petitions to intervene may be filed with the Federal Power Commission, Washington 25, D. C., in accordance with the rules of practice and procedure (18 CFR 1.8 or 1.10) on or before January 11, 1957. Failure of any party to appear at and participate in the hearing shall be deemed as waiver of and concurrence in omission herein of the intermediate decision procedure in cases where a request therefor is made.

[SEAL] J. H. GUTRIDE,
Acting Secretary.

[F. R. Doc. 56-10419; Filed, Dec. 21, 1956; 8:49 a. m.]

**SECURITIES AND EXCHANGE
COMMISSION**

[File No. 7-1838]

**ATCHISON, TOPEKA & SANTA FE
RAILWAY CO.**

NOTICE OF APPLICATION FOR UNLISTED TRADING PRIVILEGES, AND OF OPPORTUNITY FOR HEARING

DECEMBER 17, 1956.

In the matter of application by the Detroit Stock Exchange for unlisted trading privileges in Atchison, Topeka & Santa Fe Railway Company, common stock; File No. 7-1838.

The above named stock exchange, pursuant to section 12 (f) (2) of the Securities Exchange Act of 1934 and Rule X-12F-1 promulgated thereunder, has made application for unlisted trading privileges in the specified security, which is listed and registered on the New York and Midwest Stock Exchanges.

Upon receipt of a request, on or before January 3, 1957, from any interested person, the Commission will determine whether to set the matter down for hearing. Such request should state briefly the nature of the interest of the person making the request and the position he proposes to take at the hearing. In

addition, any interested person may submit his views or any additional facts bearing on this application by means of a letter addressed to the Secretary of the Securities and Exchange Commission, Washington 25, D. C. If no one requests a hearing on this matter, this application will be determined by order of the Commission on the basis of the facts stated in the application and other information contained in the official file of the Commission pertaining to the matter.

By the Commission.

[SEAL] ORVAL L. DuBOIS,
Secretary.

[F. R. Doc. 56-10408; Filed, Dec. 21, 1956; 8:47 a. m.]

[File No. 7-1839]

UNION PACIFIC RAILROAD CO.

NOTICE OF APPLICATION FOR UNLISTED TRADING PRIVILEGES, AND OF OPPORTUNITY FOR HEARING

DECEMBER 17, 1956.

In the matter of application by the Detroit Stock Exchange for unlisted trading privileges in Union Pacific Railroad Company, common stock; File No. 7-1839.

The above named stock exchange, pursuant to section 12 (f) (2) of the Securities Exchange Act of 1934 and Rule X-12F-1 promulgated thereunder, has made application for unlisted trading privileges in the specified security, which is listed and registered on the New York Stock Exchange.

Upon receipt of a request, on or before January 3, 1957, from any interested person, the Commission will determine whether to set the matter down for hearing. Such request should state briefly the nature of the interest of the person making the request and the position he proposes to take at the hearing. In addition, any interested person may submit his views or any additional facts bearing on this application by means of a letter addressed to the Secretary of the Securities and Exchange Commission, Washington 25, D. C. If no one requests a hearing on this matter, this application will be determined by order of the Commission on the basis of the facts stated in the application and other information contained in the official file of the Commission pertaining to the matter.

By the Commission.

[SEAL] ORVAL L. DuBOIS,
Secretary.

[F. R. Doc. 56-10409; Filed, Dec. 21, 1956; 8:47 a. m.]

[File No. 70-3527]

YANKEE ATOMIC ELECTRIC CO. ET AL.

ORDER REGARDING ISSUANCE AND SALE OF COMMON STOCK AND NOTES BY UTILITY SUBSIDIARY; ACQUISITION OF SUCH STOCK AND NOTES BY CERTAIN OWNER COMPANIES

DECEMBER 18, 1956.

In the matter of Yankee Atomic Electric Company, New England Power Com-

pany, The Connecticut Light and Power Company, The Hartford Electric Light Company, Western Massachusetts Companies, Public Service Company of New Hampshire, Montaup Electric Company; File No. 70-3527.

Yankee Atomic Electric Company ("Yankee"), a public-utility subsidiary of New England Electric System, a registered holding company; New England Power Company ("NEPCO"), a public-utility subsidiary of New England Electric System and an exempt holding company; The Connecticut Light and Power Company ("Connecticut Light"), a public-utility company and an exempt holding company; The Hartford Electric Light Company ("Hartford"), a public-utility company and an affiliate of a public-utility company; Western Massachusetts Companies ("Western Massachusetts"), an exempt holding company; Public Service Company of New Hamp-

shire ("New Hampshire"), a public-utility company and an exempt holding company; and Montaup Electric Company ("Montaup"), a public-utility subsidiary of Eastern Utilities Associates, a registered holding company, have filed a joint application-declaration, and an amendment thereto, pursuant to sections 6, 7, 9, and 10 of the Public Utility Holding Company Act of 1935 ("act") regarding the following proposed transactions:

Through the consummation of the issuance and sale of common stock and non-interest bearing short-term promissory notes, incident to the organization and original financing of Yankee and heretofore authorized by the Commission (Holding Company Act Release No. 13048, November 25, 1955), Yankee now has outstanding common stock and such notes held by stockholder companies as follows:

	Number of shares	Aggregate par value	Percent of total	Amount of notes
New England Power Co.	1,500	\$150,000	30.0	\$150,000
The Connecticut Light & Power Co.	750	75,000	15.0	75,000
Boston Edison Co.	475	47,500	9.5	47,500
Central Maine Power Co.	475	47,500	9.5	47,500
The Hartford Electric Light Co.	450	45,000	9.0	45,000
The Connecticut Power Co.	25	2,500	.5	2,500
Western Massachusetts Electric Co.	350	35,000	7.0	35,000
Public Service Company of New Hampshire	350	35,000	7.0	35,000
Montaup Electric Co.	225	22,500	4.5	22,500
New Bedford Gas & Edison Light Co.	125	12,500	2.5	12,500
Cambridge Electric Light Co.	100	10,000	2.0	10,000
Central Vermont Public Service Corp.	175	17,500	3.5	17,500
	5,000	500,000	100.0	500,000

According to the present filing design work is already in progress with respect to Yankee's 134,000 Kw nuclear power plant the total capital cost of which is estimated at approximately \$35,000,000. It is stated that the Atomic Energy Commission will provide financial assistance in Yankee's preliminary research and development program up to a total of \$5,000,000 and will waive use charges on the nuclear fuel during the first five years of the plant's operation. It is further stated that plant construction will begin in 1957 with completion contemplated in 1960.

Yankee now proposes to issue and sell 5,000 additional shares of common stock of the aggregate par value of \$500,000. The proceeds will be used to retire its outstanding short-term notes. The shares will be offered at a price of \$100 a share as fixed by Yankee's board of directors to the stockholder companies during a 15 day subscription period on the basis of one new share for each share presently held. In addition Yankee proposes, from time to time prior to December 31, 1957, to issue to the above named stockholder companies non-interest bearing promissory notes in the aggregate amount of \$1,000,000. Such notes will mature not more than one year from the date of issue. The stockholder companies propose to acquire the additional shares of Yankee common stock and the short-term notes in the proportions indicated in the table above and it is contemplated that these notes will ultimately be replaced by additional common stock investments by the stockholder companies. Treasury funds will be used to effectuate such acquisitions

and the stockholder companies subject to the provisions of sections 9 and 10 of the act seek Commission approval thereof.

Nepco and Connecticut Light request that the exemptions from holding company status granted by the Commission's order in File No. 70-3396 (Holding Company Act Release No. 13048) be continued. Since these two companies have previously been granted exemption as holding companies with respect to Yankee and they are merely acquiring additional shares of the common stock of Yankee, it is unnecessary to request, or the Commission to grant, the continuance of the exempt status.

New England Power Service Company, an affiliated service company, will perform incidental services in connection with the proposed transactions and such services will be performed at the actual cost thereof estimated not to exceed \$2,500. Other expenses to be borne by Yankee are the original issue stamp taxes of \$550 and a state filing fee of \$250 making total estimated expenses of Yankee \$3,300. Expenses in connection with the proposed acquisition of securities, including legal fees and the preparation of regulatory Commission applications by applicant companies, other than Yankee, are estimated not to exceed \$1,300 in the aggregate.

The Massachusetts Department of Public Utilities has expressly authorized the proposed issuance of common stock by Yankee.

Due notice having been given of the filing of the joint application-declaration and a hearing not having been requested of or ordered by the Commission; and

the Commission having examined the filing and finding that the applicable provisions of the act and the rules thereunder are satisfied, that no adverse findings are necessary in respect of the proposed issuance, sale and acquisition of said notes and common stock and that the expenses not in excess of the estimates set forth above are not unreasonable; and the Commission deeming it in the public interest and in the interest of investors and consumers that said joint application-declaration should be granted and permitted to become effective forthwith:

It is ordered, Pursuant to Rule U-23 and the applicable provisions of the act that said joint application-declaration, as amended, be, and it hereby is, granted and permitted to become effective forthwith, subject to the terms and conditions prescribed in Rule U-24.

By the Commission.

[SEAL]

ORVAL L. DuBOIS,
Secretary.

[F. R. Doc. 56-10410; Filed, Dec. 21, 1956;
8:47 a. m.]

[File No. 70-3541]

AMERICAN NATURAL GAS CO. AND MICHIGAN
CONSOLIDATED GAS CO.

NOTICE OF PROPOSED ISSUE AND SALE OF
COMMON STOCK BY HOLDING COMPANY
PURSUANT TO RIGHTS OFFERING; PROPOSED
CHARTER AMENDMENT BY SUBSIDIARY IN-
CREASING ITS AUTHORIZED COMMON STOCK,
AND PROPOSED ISSUE AND SALE OF COMMON
STOCK BY SUBSIDIARY TO PARENT COM-
PANY

DECEMBER 18, 1956.

Notice is hereby given that American Natural Gas Company ("American Natural"), a registered holding company, and its wholly owned subsidiary Michigan Consolidated Gas Company ("Michigan Consolidated") have filed a joint application-declaration pursuant to the Public Utility Holding Company Act of 1935 ("act"), designating sections 6 (a), 6 (b), 7, 9 and 10 of the act as applicable to the transactions therein proposed, which are summarized as follows:

I. *American Natural issue of common stock.* American Natural proposes to issue to holders of its 4,421,132 outstanding shares of common stock (par value \$25 per share) transferable subscription warrants to purchase 442,114 additional shares of its common stock. The warrants will evidence a number of rights equal to the number of shares outstanding, and 10 rights will be required to purchase each share of the additional common stock. The subscription price will be determined prior to the time the offering is released and will be lower than the price then prevailing for outstanding shares of common stock of the company on the New York Stock Exchange.

Each holder of outstanding shares of American Natural's common stock will also be given the privilege of subscribing at the subscription price for any number of shares of the additional common stock not purchased through the exercise of

rights, subject to allotment if sufficient shares are not available to meet the demand.

It is proposed to consummate the financing early in 1957. Information as to the subscription price and the timing and duration of the offering, and the full terms with respect thereto, will be supplied by amendment.

The company states that it will make arrangements with its subscription agent whereby the latter will, without service charge to stockholders, attempt to execute purchase or sale orders of stockholders designed either to (a) round out their interests to multiples of the number of rights required to purchase one additional share of common stock or (b) dispose of rights when they are insufficient to permit purchase of one share.

The company further states that it may stabilize the price of its common stock, by the purchase of shares in the stock exchanges, in the open market or otherwise. Stabilizing activities, if commenced, may be terminated at any time, and in any case not later than the expiration of the warrants. At no time will the company acquire a long position in excess of 10 percent of the number of additional shares being offered. Any shares so acquired will be sold in ordinary brokerage transactions on the New York Stock Exchange.

American Natural will use the net proceeds from the sale of its common stock to purchase 1,786,000 additional shares of the common stock of Michigan Consolidated, thereby aiding in financing the expansion program upon which the system is engaged.

II. *Michigan Consolidated amendment of charter and issue of common stock.* Michigan Consolidated, which now has outstanding 5,477,000 shares of 5,500,000 authorized shares of common stock (par value \$14 per share), proposes to increase its authorized common stock to 7,700,000 shares by amendment to its Certificate of Incorporation, pursuant to the general corporate laws of the State of Michigan.

Thereafter, Michigan Consolidated proposes to issue and sell to American Natural, and the latter proposes to buy, 1,786,000 shares of Michigan Consolidated's common stock for \$25,004,000 in cash, representing the aggregate par value thereof. Funds for this purpose will be provided through the sale by American Natural of additional shares of its common stock, as aforesaid.

Michigan Consolidated further proposes to pay to American Natural a special cash dividend of \$4,998,000 out of its retained earnings (amounting to \$9,975,456 at September 30, 1956), and to issue and sell to American Natural, and the latter proposes to buy, an additional 357,000 shares of common stock of Michigan Consolidated for \$4,998,000 in cash.

The sale to American Natural of the 1,786,000 additional shares of its common stock for \$25,004,000 in cash will provide Michigan Consolidated with funds to repay or reduce short-term loans incurred for construction purposes and to pay construction costs. The payment by Michigan Consolidated to

American Natural of the \$4,998,000 cash dividend and the concurrent reinvestment of the same amount by American Natural in 357,000 additional shares of Michigan Consolidated's common stock will have the effect of converting this portion of Michigan Consolidated's retained earnings into common stock, assuring a larger permanent common equity for the latter company.

Michigan Consolidated states that during the spring or early summer it proposes to issue and sell (pursuant to a later filing with this Commission) from \$25,000,000 to \$30,000,000 of bonds, the proceeds to be used for construction purposes and to repay any short-term loans then outstanding.

American Natural and Michigan Consolidated estimate their fees and expenses to be incurred in connection with the proposed transactions as follows:

	American Natural	Michigan Consolidated
Michigan Public Service Commission fee.....		\$30,000
Michigan Corp. and Securities Commission fee.....		15,400
Registration fee, this Commission.....	\$2,500	
Federal original issue tax.....	12,100	33,000
Listing fee.....	1,125	
Printing.....	45,000	
Blue Sky expense.....	2,500	
Charges and expenses of subscription agent, transfer agent and registrar.....	70,000	
Arthur Andersen & Co., for accounting services.....	32,000	
Engineering fees:		
Ralph E. Davis.....	5,000	
E. P. Ogier.....	2,300	
Legal fees:		
Sidley, Austin, Burgess & Smith.....	17,000	750
Dyer, Meek, Rueggesser & Bullard.....	2,500	1,250
Fairchild, Foley & Sammond.....	1,000	
Pitney, Hardin & Ward.....	1,500	
System service company (at cost).....	5,000	750
Miscellaneous.....	1,500	850
Total.....	201,285	82,000

In the opinion of company counsel, no further approval or consent of any regulatory body other than this Commission is required for the issue and sale of the common stock of American Natural, but the approval of the Michigan Public Service Commission is required for the issue and sale of the additional common shares by Michigan Consolidated to American Natural. A copy of the State commission order will be filed by amendment herein.

Notice is further given that any interested person may, not later than January 10, 1957 at 5:30 p. m., request the Commission in writing that a hearing be held on such matter, stating the nature of his interest, the reasons for such request, and the issues of fact or law, if any, raised by said application-declaration which he desires to controvert; or he may request that he be notified if the Commission should order a hearing thereon. Any such request should be addressed: Secretary, Securities and Exchange Commission, Washington 25, D. C. At any time after said date the application-declaration, as filed or as amended, may be granted and permitted to become effective, or the Commission may grant exemption from its rules as provided in

Rules U-20 (a) and U-100, or take such other action as it may deem appropriate.

By the Commission.

[SEAL]

ORVAL L. DuBois,
Secretary.

[F. R. Doc. 56-10411; Filed, Dec. 21, 1956; 8:47 a. m.]

[File No. 24SF-2049]

BEVANDA MINES, INC.

ORDER TEMPORARILY SUSPENDING EXEMPTION, STATEMENT OF REASONS THEREFOR, AND NOTICE OF OPPORTUNITY FOR HEARING

DECEMBER 18, 1956.

I. Bevanda Mines, Inc., Lovelock, Nevada, filed with the Commission on March 22, 1955, a Notification on Form 1-A and an Offering Circular relating to a proposed offering of 50,000 shares of stock at \$1 per share, for the purpose of obtaining an exemption from the registration requirements of the Securities Act of 1933, as amended, pursuant to the provisions of section 3 (b) thereof and Regulation A thereunder.

II. The Commission has reason to believe:

A. That the offering, if made or continued, would operate as a fraud or deceit upon purchasers in that:

(1) Material changes have occurred in the officers and management of the company which are not reflected in its notification and Offering Circular.

(2) The sales literature of the subject corporation, while referring to the reputation of one of its officers and/or directors, fails to fully and accurately disclose his background and reputation.

B. That the terms and conditions of Regulation A have not been complied with by the subject corporation in that it has failed to file any Form 2-A report of sales as required by Rule 224 under Regulation A and has ignored a request by a member of the Commission's staff for such report.

III. It is ordered, Pursuant to Rule 223 (a) of the general rules and regulations under the Securities Act of 1933, as amended, that the exemption under Regulation A be, and it hereby is, temporarily suspended.

Notice is hereby given that any persons having any interest in the matter may file with the Secretary of the Commission a written request for hearing; that, within 20 days after receipt of such request, the Commission will, or at any time upon its own motion may, set the matter down for hearing at a place designated by the Commission for the purpose of determining whether this order of suspension should be vacated or made permanent, without prejudice, however, to the consideration and presentation of additional matters at the hearing; and that notice of the time and place of said hearing will be promptly given by the Commission.

By the Commission.

[SEAL]

ORVAL L. DuBois,
Secretary.

[F. R. Doc. 56-10412; Filed, Dec. 21, 1956; 8:47 a. m.]

INTERSTATE COMMERCE COMMISSION

FOURTH SECTION APPLICATIONS FOR RELIEF

DECEMBER 19, 1956.

Protests to the granting of an application must be prepared in accordance with Rule 40 of the general rules of practice (49 CFR 1.40) and filed within 15 days from the date of publication of this notice in the **FEDERAL REGISTER**.

LONG-AND-SHORT HAUL

FSA No. 33070: Liquefied petroleum gas from Doe Run, Ky., to Piketon and Urbana, Ohio. Filed by O. W. South, Jr., Agent, for interested rail carriers. Rates on gas, liquefied petroleum, tank-car loads from Doe Run, Ky., to Piketon and Urbana, Ohio.

Grounds for relief: Market competition and circuitry.

Tariff: Supplement 2 to Agent Spaninger's tariff I. C. C. 1561.

FSA No. 33071: Superphosphate from Florida to Madison, Wis. Filed by O. W. South, Jr., Agent, for interested rail carriers. Rates on superphosphate (acid phosphate) other than defluorinated, in bulk, carloads from Agricola, Armour, Bonnie, Brewster, East Tampa, Nichols, Pierce, Prairie, Ridgewood and Royster, Fla., to Madison, Wis.

Grounds for relief: Rail-barge-truck competition and circuitry.

Tariff: Supplement 83 to Agent Spaninger's tariff I. C. C. 1366.

FSA No. 33072: Salt From Louisiana and Texas to Columbus and Whitbury, Miss. Filed by F. C. Kratzmeir, Agent, for interested rail carriers. Rates on salt, mine run, carload from Avery Island, Anse La Butte, Carla, Jefferson Island, Weeks, Winfield, La., and Grand Saline, Tex., to Columbus and Whitbury, Miss.

Grounds for relief: Rail carrier competition and circuitry.

Tariff: Supplement 80 to Agent Kratzmeir's tariff I. C. C. 3903.

FSA No. 33073: Salt from Louisiana to Anniston, Ala. Filed by F. C. Kratzmeir, Agent, for interested rail carriers. Rates on salt, mine run, carloads from Anse La Butte, Avery Island, Jefferson Island, and Weeks, La., to Anniston, Ala.

Grounds for relief: Circuitous routes.

Tariff: Supplement 81 to Agent Kratzmeir's tariff I. C. C. 3903.

FSA No. 33074: Brick between the South and stations in Virginia, West Virginia, Kentucky, and Ohio. Filed by O. W. South, Jr., Agent, for interested rail carriers. Rates on brick and related articles, also refractory materials, carloads between points in southern ter-

ritory (except points in Florida and Louisiana), on the one hand, and stations in Virginia, West Virginia, Kentucky, and Ohio, on the other.

Grounds for relief: Short-line distance formula and circuitry.

Tariff: Supplement 34 to Agent Spaninger's tariff I. C. C. 1525.

FSA No. 33075: Trailer-on-flat-car service between Kansas City, Mo.-Kans., also St. Louis, Mo.-East St. Louis, Ill., and the Southwest. Filed by F. C. Kratzmeir, Agent, for interested rail carriers. Rates on class and commodity freight loaded in or on trailers, including freight in demountable trailer bodies and transported on railroad flat cars between Illinois (East St. Louis and vicinity), Kansas (Kansas City and vicinity) and Missouri (Kansas City, St. Louis and vicinity), on the one hand and points in Arkansas, Louisiana, New Mexico, Oklahoma and Texas, also Memphis, Tenn., on the other.

Grounds for relief: Truck competition.

Tariff: Agent F. C. Kratzmeir's tariff I. C. C. 4233.

FSA No. 33076: Sulphate of alumina from Bastrop, La., to the South. Filed by F. C. Kratzmeir, Agent, for interested rail carriers. Rates on sulphate of alumina, dry in bulk in packages, or in bulk, carloads from Bastrop, La., to points in southern territory.

Grounds for relief: Short-line distance formula, market competition and circuitry.

Tariff: Supplement 190 to Agent Kratzmeir's tariff I. C. C. 4193.

FSA No. 33077: Livestock from the West to lower Mississippi River crossings. Filed by F. C. Kratzmeir, Agent, for interested rail carriers. Rates on livestock, carloads from points in western trunk line territory to Memphis, Tenn., Natchez and Vicksburg, Miss., Baton Rouge and New Orleans, La.

Grounds for relief: Circuitous routes.

Tariff: Supplement 43 to Agent Kratzmeir's tariff I. C. C. 4013.

FSA No. 33078: Superphosphate from the South to Colorado. Filed by O. W. South, Jr., Agent, for interested rail carriers. Rates on superphosphate (acid phosphate), carloads from points in southern territory to Alamosa, Grand Junction and Monte Vista, Colo.

Grounds for relief: Market competition, short-line distance formula and circuitry.

Tariff: Supplement 25 to Agent Spaninger's tariff I. C. C. 1522.

FSA No. 33079: Merchandise from Cincinnati, Ohio to Fort Myers, Fla. Filed by O. W. South, Jr., Agent, for interested rail carriers. Rates on mer-

chandise, in mixed carloads from Cincinnati, Ohio to Fort Myers, Fla.

Grounds for relief: Modified short-line distance formula and circuitry.

Tariff: Supplement 59 to Agent Spaninger's tariff I. C. C. 1458.

FSA No. 33080: Kyanite from Clover, S. C., to Erwin, Tenn. Filed by O. W. South, Jr., Agent, for interested rail carriers. Rates on kyanite, crude or ground (not pulverized), carloads from Clover, S. C., to Erwin, Tenn.

Grounds for relief: Circuitous route.

Tariff: Supplement 124 to Agent Spaninger's tariff I. C. C. 1346.

FSA No. 33081: Scrap paper from Calhoun, Tenn., to Wabash, Ind. Filed by O. W. South, Jr., Agent, for interested rail carriers. Rates on paper, scrap or waste, not sensitized (not excelsior paper), in packages, carload from Calhoun, Tenn., to Wabash, Ind.

Grounds for relief: Short-line distance formula and circuitry.

Tariff: Supplement 24 to Agent Spaninger's tariff I. C. C. 1496.

FSA No. 33082: Pig iron from Birmingham, Ala., to Cartersville, Ga. Filed by O. W. South, Jr., Agent, for interested rail carriers. Rates on pig iron and related articles, carloads from Birmingham, Ala., and points in Alabama grouped with Birmingham, named in item 135 of Agent C. A. Spaninger's tariff I. C. C. 1420, to Cartersville, Ga.

Grounds for relief: Circuitous route.

Tariff: Supplement 74 to Agent Spaninger's tariff I. C. C. 1420.

FSA No. 33083: Wrought iron pipe from Baton Rouge, La., to the Southwest. Filed by F. C. Kratzmeir, Agent, for interested rail carriers. Rates on pipe, wrought iron or steel, and related articles, carloads from Baton Rouge, La., to points in Arkansas, Missouri, New Mexico, Oklahoma, and Texas.

Grounds for relief: Market competition, short-line distance formula and circuitry.

Tariff: Supplement 93 to Agent Kratzmeir's tariff I. C. C. 4116.

FSA No. 33084: Lumber from Alberta and British Columbia to St. Louis, Mo. Filed by W. J. Prueter, Agent, for interested rail carriers. Rates on lumber and related articles, carloads from points in Alberta and British Columbia, Canada to St. Louis, Mo.

Grounds for relief: Circuitous route.

Tariff: Supplement 13 to Agent W. J. Prueter's I. C. C. 1581.

By the Commission.

[SEAL] HAROLD D. MCCOY,
Secretary.

[F. R. Doc. 56-10415; Filed, Dec. 21, 1956;
8:48 a. m.]